1990-92 Indiana Vocational Technical College Catalog

IVYTECH
Indiana's Technical College

COLLEGE CALENDAR
1990—91

Fall Semester 1990

August 27	Classes Begin
September 3	Labor Day Holiday
October 23—24	Midterm Break
November 22—23	Thanksgiving Holiday
December 22	Classes End

Spring Semester 1991

January 14	Classes Begin
March 11—15	Midterm Break
May 11	Classes End

Summer Session 1991

May 28	Classes Begin
July 4	Independence Day Holiday
August 12	Classes End

COLLEGE CALENDAR
1991—92

Fall Semester 1991

August 26	Classes Begin
September 2	Labor Day Holiday
October 22—23	Midterm Break
November 28—29	Thanksgiving Holiday
December 21	Classes End

Spring Semester 1992

January 13	Classes Begin
March 9—13	Midterm Break
May 9	Classes End

IVY TECH CATALOG 1990-1992

INDIANA VOCATIONAL TECHNICAL COLLEGE

February 1990

IVYTECH

Indiana's Technical College

NONDISCRIMINATION POLICY AND EQUAL OPPORTUNITY/AFFIRMATIVE ACTION PROGRAM

Indiana Vocational Technical College seeks to develop degree credit programs, courses, and community service offerings and to provide open admission, counseling, and placement services for all persons, regardless of race, color, creed, religion, sex, national origin, physical or mental handicap, age or veteran status.

CATALOG DISCLAIMER

This catalog is intended to supply accurate information to the reader. From time to time, certain information may be changed.

The College may revise any matter described in this catalog at any time without publishing a revised version of the catalog. Information which appears to apply to a particular student should be verified by the Office of Student Services. This publication and its provisions are not in any way a contract between the student and Indiana Vocational Technical College.

February 1990

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Administrative Operations

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COLLEGE CENTRAL
OFFICES
One West 26th Street
P.O. Box 1763
Indianapolis, IN 46206-1763
Phone (317) 921-4882

MESSAGE FROM THE PRESIDENT

Indiana Vocational Technical College is at work across Indiana providing technical education that matches job opportunities with job skills.

The variety in Ivy Tech's instructional programming and the convenience of a statewide instructional network encourage individuals to attend Ivy Tech to prepare for initial employment or job upgrade.

In addition to Ivy Tech's associate degrees and certificate programs that provide the skills demanded by today's employers, the College offers custom-designed training for Indiana business and industry.

I invite you to examine this catalog and then put Ivy Tech to work for you. From the list on page vi, you may contact the instructional center closest to you for detailed information on registration, programs of study, or industrial training services.

Jerry Lamkin

Gerald I. Lamkin, President

TABLE OF CONTENTS

COLLEGE PROFILE

Moving Forward

In just over a quarter of a century, Indiana Vocational Technical College, popularly known as Ivy Tech, has grown from an idea to a thriving post-secondary institution. In 1963, the Indiana General Assembly established Ivy Tech as Indiana's first statewide vocational technical college by appropriating $50,000 for its development. Following appointment of a State Board of Trustees, a president was named and the first training program established in 1965. Later amendments to the enabling legislation authorized Ivy Tech's present regional structure of thirteen administrative centers designed to provide accessible technical educational opportunities to all Indiana citizens. Between 1966 and 1969 thirteen regional boards of trustees were appointed and thirteen regions chartered.

The mission of Ivy Tech is stated in the authorizing legislation: "There shall be, and hereby is created and established, a new state post-high school educational institution to be devoted primarily to occupational training of a practical, technical, and semi-technical nature for the citizens of Indiana."

Ivy Tech's mission was broadened in 1971 by the added authority to grant diplomas and certificates, including one-year Technical Certificates and two-year Associate degrees, to students successfully completing prescribed programs. Furthermore, the College was granted permission to offer general education courses for vocational technical education programs.

The College has shown impressive growth in its relatively short history. Enrollment increased from 3,233 students in the fall quarter of 1968 to 28,924 in the fall of 1989.

Ivy Tech serves the following target population groups:

(1) students who have not graduated from high school;
(2) high school graduates interested in continuing their education in a vocational-technical type institution with programs of shorter duration than a four-year college program;
(3) students who have not completed college work;
(4) college graduates interested in supplementing their education with vocational-technical training;
(5) adults needing and desiring retraining or additional training in a vocational-technical specialty.

Within the statewide Ivy Tech system, some 1,500 full- and part-time faculty members teach in more than 50 program areas offered in four instructional divisions: Business, Office and Information Systems Technologies; Visual Communications Technologies; Human Services and Health Technologies; and Applied Science and Technologies.

The College's regional offices of Business and Industry Training work closely with Indiana businesses to offer customized training and retraining in response to specific company needs. These training programs are available at Ivy Tech or in-plant.

College Goals

In order to focus on the mission of the College more specifically and to enable the means and processes to be developed by which this mission will be accomplished, the College has formulated seven goals. These goals, as adopted by the State Trustees in June 1985, are as follows:

1. The College will offer, through a flexible delivery system, education consistent with the economic development needs of the State of Indiana.
2. The College will offer a range of occupationally oriented programs with multiple entry and exit opportunities as well as a range of student services consistent with the individual student's interets, needs and abilities.
3. The College will strive to provide the opportunity for citizens of the state to enroll in the College regardless of their financial resources, previous educational experiences or geographic location.
4. The College will strive to provide the opportunity for each applicant to gain occupational competence regardless of age, race, sex, or religious affiliation.
5. The College will promote throughout the State of Indiana a better understanding and appreciation of the value of occupationally based education and will encourage increased support for this education.
6. The College will provide within its occupational program offerings educational experiences supportive of the social, cultural, and personal development of the individual.
7. The College will strive to cooperate with other providers of occupationally oriented education in all educational sectors.

Ivy Tech's rapid growth and educational achievement can be attributed to firm adherence to its mission and goals and to strong support and encouragement from state and community leaders.

INSTRUCTIONAL CENTERS

Ivy Tech—Anderson
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Director of Operations
325 West 38th Street
Anderson, IN 46014-2694
Phone: (317)643-7133
Moving soon to:
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Anderson, IN 46013-1502

Ivy Tech—Bloomington
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Bloomington, IN 47401-0393
Phone: (812)332-1559

Ivy Tech—Columbus
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Vice President/Chancellor
James R. Wells
Executive Dean
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Columbus, IN 47203-1868
Phone: (812)372-9925

Ivy Tech—Elkhart
Jane Roberts
Director of Center
2521 Industrial Parkway
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Phone: (219)493-4657

Ivy Tech—Evansville
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Vice President/Chancellor
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Phone: (812)426-2865

Ivy Tech—Fort Wayne
Jon L. Rupright
Vice President/Dean
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Fort Wayne, IN 46805-1489
Phone: (219)482-9171

Ivy Tech—Gary
Ernest Jones
Vice President/Chancellor
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Gary, IN 46409-1499
Phone: (219)981-1111

Ivy Tech—Hammond
Luis Gonzalez
Acting Center Director
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Hammond, IN 46320-2356
Phone: (219)937-9422

Ivy Tech—Indianapolis
Meredith L. Carter
Vice President/Chancellor
One West 26th Street
Indianapolis, IN 46208-4777
Phone: (317)921-4800

Ivy Tech—Kokomo
M. Ken Martin
Executive Dean
1815 East Morgan Street
Kokomo, IN 46901-2599
Phone: (317)459-0561

Ivy Tech—Lafayette
Betty J. Doversberger
Executive Dean
3208 Ross Road
Lafayette, IN 47905-5217
Phone: (317)477-7401

Ivy Tech—Lawrenceburg
Gwen Wright
Director of Operations
575 Main Street
Lawrenceburg, IN 47025-1661
Phone: (812)537-4010

Ivy Tech—Logansport
Daniel Mordenti
Director of Center
Eastgate Plaza
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Logansport, IN 46947-2149
Phone: (219)753-5101

Ivy Tech—Madison
Gregory K. Flood
Executive Dean
Highway 62 and Ivy Tech Drive
Madison, IN 47250-1659
Phone: (812)265-2580

Ivy Tech—Marion
Ken Wenger
Acting Site Director
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Marion, IN 46953-9370
Phone: (317)622-9843

Ivy Tech—Muncie
Carl T. Swift, Interim Dean
Regional Operations
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Muncie, IN 47302-9448
Phone: (317)289-2291

Ivy Tech—Richmond
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Vice President/Chancellor
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Richmond, IN 47374-1298
Phone: (317)966-2656

Ivy Tech—Sellersburg
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Executive Dean
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Sellersburg, IN 47172-1829
Phone: (317)246-3301

Ivy Tech—South Bend
Carl F. Lutz
Vice President/Chancellor
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South Bend, IN 46619-3892
Phone: (219)289-7001

Ivy Tech—Terre Haute
Samuel E. Borden
Vice President/Dean
7377 S. Dixie Bee Road
Terre Haute, IN 47802-4898
Phone: (812)299-1121

Ivy Tech—Valparaiso
J. Robert Jeffs
Center Director
2401 Valley Drive
Valparaiso, IN 46383-2520
Phone: (219)464-8514

Ivy Tech—Warsaw
106 N. Buffalo Street
Warsaw, IN 46580-2728
Phone: (219)267-5428
Moving soon to:
One Tiger Lane
Warsaw, IN 46580-4546

COLLEGE INFORMATION AND SERVICES

ENTERING THE COLLEGE

Admissions—Non—Degree Objective

Ivy Tech offers courses in many special career areas, including college preparation. Persons interested in taking any of the Ivy Tech courses are invited to do so. Admission as a non-degree student is easy. Simply file a completed registration form in the Office of Student Services

Admissions—Degree Objective

For admission as a regular student to one of Ivy Tech's programs leading to an Associate Degree or Technical Certificate, the standard requirement is a high school diploma or GED certificate. The Office of Student Services will assist the student, on request, in obtaining an official copy of the diploma or GED certificate, which must be issued from the previously attended institution.

Applicants are advised to participate in assessment testing. The purposes of assessment testing are to measure the student's achievement in basic skills areas of mathematics, reading, writing, reasoning, and communication, and, secondly, to assist the student in the selection of an occupational program. If assessment indicates that the applicant has the basic skills needed for success in the chosen program he/she may be allowed to begin program level coursework. If the assessment reveals skill deficiencies, the applicant will be advised to complete appropriate remedial coursework. Applicants may enroll in program courses when identified academic deficiencies are not prerequisites for successful completion of the program course. Students may or may not be eligible for financial aid during this period.

If the assessment indicates that the applicant is unlikely to achieve success at Ivy Tech, at that point in time, he or she will be referred to an appropriate community resource offering the needed assistance. The applicant may enter the admissions process at a later date, following completion of skills upgrading.

Assessment testing may be waived if the applicant submits either:

(a) an official transcript from an accredited post-secondary institution indicating achievement consistent with Ivy Tech's admission standards;

(b) acceptable standardized test scores (i.e., SAT, ACT).

The College reserves the right to guide the enrollment of students in particular programs or courses on the basis of past academic records, vocational/technical counseling, and testing.

Students seeking admission to certain health occupation programs may be requested to take part in specific pre-enrollment assessments and/or interviews to fulfill College or external agency requirements. Certain prerequisites, such as health examinations, may be required before enrolling in specific programs or courses.

Basic Skills Advancement Program Services

Ivy Tech technical institutes and major instructional centers offer Basic Skills Advancement Programs to help insure the success of students in the completion of their educational goals. This supplemental program is designed for students enrolled in regular programs or courses at the College who are encountering academic difficulty or have been identified as having encountered academic difficulty in the past. Ivy Tech is concerned about the success of its students, and this program is designed to insure that every student has had the opportunity to be successful.

Services provided through the Basic Skills Advancement Program include diagnostic testing and assessment, financial aid counseling, career counseling, placement services and instruction. The need for these services may be identified at the time of admission; however, a student may utilize any or all services upon encountering academic difficulty during a course of study. Professional basic skills advancement instructors and laboratory technicians provide supplemental instruction in the areas of math, communications, sciences, human relations, GED preparation and study skills. The delivery of instruction may be a basic skills advancement course in a classroom setting, it may be offered to students one-on-one as tutorial assistance, or as a self-paced study in the Basic Skills Center. For further information about the College's Basic Skills Advancement Programs, the student should contact either the Student Services Offices or the Basic Skills Center.

Readmission

Should a course of study at Ivy Tech be interrupted, students may request readmission at a later date. This may be accomplished by contacting the Office of Student Services. Information on eligibility for financial aid will be available to returning students.

Limited Admissions Enrollment

Sometimes the number of students admitted and enrolled in programs and/or courses may be limited by College resources or facilities—including available lab equipment and related support, or the number of available

health program clinical work stations. The Office of Student Services should be contacted regarding programs which have limited access.

Admission Procedures and Support Documents—Degree Objective

1. The College requires all students to complete the student admission data form, which establishes records in the Admissions Office.
2. Proof of high school graduation or GED completion is normally required for admission into a program leading to a certificate or a degree. The high school graduate or individual who has the GED should request the secondary school or testing center to send an official copy of the transcript or GED certification to the Admissions Office by the end of the first semester of attendance.
3. The College has counselors available to assist students in selecting a course of study at Ivy Tech.
4. The College recommends that program declared students either provide acceptable standardized test scores or participate in the College's diagnostic testing program.
5. Should a student wish to transfer a credit to Ivy Tech from another college or similar post-secondary institution previously attended, the student must forward an official copy of the grade transcript or other document from that institution to Ivy Tech before enrolling for courses if applying for financial aid or no later than halfway through the first semester of enrollment or re-enrollment.
6. The College requires a health examination for certain programs.

Transferring to the College

The College encourages students who have previously attended other recognized colleges and universities, adult education programs, and high school vocational technical programs to have their transcripts forwarded to Ivy Tech so the College can consider them for transfer of credit and/or advanced placement by the midpoint of the first semester of enrollment or re-enrollment. Students are responsible for providing pertinent course descriptions and/or copies of the college catalog(s) if further documentation is needed to facilitate the transfer credit review. The College will be glad to assist individuals with the evaluation of their prior educational experiences.

The College reserves the right to refuse admission or to accept conditionally those students who have been dismissed for disciplinary reasons from other colleges or universities.

Transferring to Other Colleges

It is the right and responsibility of the receiving institution to decide whether to accept credits from another institution. The associate of applied science degree (A.A.S.) and the certificate programs offered by Ivy Tech are intended to prepare students with the necessary knowledge and skills to enter or advance in the workplace. In general, the A.A.S. and certificate programs are not designed to transfer to other institutions. However, some receiving institutions will permit a student to receive credit for a course upon successful completion of an examination or to receive credit for courses completed as part of an A.A.S. or certificate program. Ivy Tech does offer associate of science (A.S.) degree programs at certain sites which, through agreements with specific institutions, are designed to transfer. Students interested in transfer programs and credit by examination should check with the Office of Student Services.

International Students

International students must meet the College admission standards and certain other requirements. International students should apply for admission to Ivy Tech at least ninety (90) days prior to the beginning of the term they wish to attend.

An international student must also provide proof of adequate financial support for College fees and living expenses for each year while attending the College. The international student should submit a letter from an appropriate sponsor, government official, or bank official stating that sufficient funds are available to cover the cost of the student's education and that these funds will be available to the student while attending college in this country.

Handicapped Students

College programs and facilities are designed to be accessible to handicapped students. Each regional institute has designated parking and special restroom facilities for the physically handicapped. Support services will also aid handicapped students with career planning, financial aid, personal counseling, and placement. The College staff works with The Department of Vocational Rehabilitation and other service agencies to assist physically and psychologically impaired students through available local community resources.

Students with handicaps are urged to contact the Student Services Office for help with their special challenges as students at Ivy Tech.

Student Orientation

All new degree students are encouraged to participate in an orientation program prior to or during the first week of classes. The purpose of the orientation is to assist students in making the transition to the college environment. Topics discussed include student services, financial aid, business services, instructional programs, and college activities, policies and procedures.

TEST-OUT PROCEDURES

Policies regarding testing out of courses vary from program to program. A student who wishes to test-out of a course should contact the program advisor. A $5.00 per credit hour fee may be charged for the tests.

The general guidelines for test-out are as follows:

1. Test-out examinations should be taken before registering for the course for which the test—out is attempted.
2. Test-out examinations are normally completed at one sitting (unless the test is offered in two parts, i.e., lab and written exams).
3. Test-out credits are not included in credit computations for financial aid programs or student grade point averages.

REGISTRATION

Registering for Courses

The registration process includes financial aid and program counseling, selection of courses, and payment of fees. Newly admitted students will be notified of when to register for their first semester classes.

Specified days are set aside for registration before the beginning of each semester. Students should seek assistance in course selection from faculty advisors or counselors in the Office of Student Services before registering for classes.

The Student Services Office of each Ivy Tech region can supply information concerning registration.

NOTE: STUDENTS ARE REGISTERED WHEN FEES HAVE BEEN SATISFIED.

Open/Late Registration

Open registration will begin three weeks before the start of the term. Registration after the first day of classes each term is considered late. Students may register after the first week of classes with the permission of the instructor, however, a late registration fee may be assessed any time after the first day of classes. For further information, students are asked to contact the Office of Student Services.

Drop—and—Add

Courses may be dropped or added during the first two weeks of the regular semester. Students may be eligible for a full or partial refund of the assessed fees for courses dropped during the first four weeks of the semester. Courses are not officially dropped until the necessary forms have been completed and returned to the Office of Student Services. After the first week of the semester, students will need to receive the permission of the instructor to add a course.

Student Withdrawal

From the beginning of the third week to the end of the week marking the completion of 75% of the course, a student may withdraw from a course by filing a withdrawal form at the Office of Student Services and discontinuing class attendance. (Students may be eligible for a full or partial refund of the assessed fees—see below.) Records will then indicate status of "W" in place of a grade for that course. The Student Withdrawal is complete when the necessary forms have been submitted to the Office of Student Services.

A student who discontinues class attendance after the last day to withdraw with a "W" will receive a grade commensurate with the course requirements.

Further information is available from the Office of Student Services.

COLLEGE FEES

The College seeks to provide quality education at the lowest possible cost. General fees are based on the number of credit hours for which the student has registered. Additional costs include Divisional fees and special fees pertaining to particular courses or College activities. Out of state students pay an additional fee per credit hour.

Additional Expenses

The following additional expenses may apply, depending upon the program of study:

BOOKS: All students are expected to purchase the textbooks for their respective programs. The cost of books will vary according to classes taken.

TOOLS: The College furnishes major equipment items for instruction; however, in many programs or courses students must furnish additional hand tools and equipment.

UNIFORMS AND OTHER SPECIAL EQUIPMENT: Several programs require students to furnish uniforms and special safety clothing.

ROOM AND BOARD: Since Ivy Tech is not a residential college, room and board fees are not applicable.

TRAVEL: Transportation costs to and from the College vary according to the distance and the type of transportation used.

For a current schedule of fees and further information, contact the Office of Student Services.

Payment of Fees

All enrolled students must make arrangements at the time of registration to pay all applicable fees. A student is officially registered and allowed to attend classes when all fees have been satisfied.

REFUND POLICY

Students choosing to drop or withdraw from a course or courses must notify the College in writing using the drop-and-add or withdrawal form. The fee refund for voluntary withdrawal from a class, when applicable, will be processed only after the student files a College drop-and-add form or withdrawal form with the Student Services Office.

The College will refund students' assessed fees, with the exception of the late registration fee, on a schedule computed as follows for a regular semester:

From registration to end of first week of semester	100% refund
To end of second week of semester	75% refund
To end of third week of semester	50% refund
To end of fourth week of semester	25% refund
After fourth week of semester	No refund

The effective date for calculating the fee refund is the date of written notification of the drop-and-add form.

Certain other fees may be refundable. Further details are available from the Office of Student Services.

All refunds will be issued by check and mailed to the address shown on the student registration form.

Cancellation of credit courses by the College will result in total refund of fees collected for those courses.

FINANCIAL AID

Indiana Vocational Technical College offers various types of financial aid to students who need assistance to continue their education. Students are encouraged to carefully survey the variety of financial aid options available. Students must be accepted for admission to the College in an eligible program. Full-time and part-time students may be eligible. Financial aid is available to eligible students regardless of age. The Office of Financial Aid will help with information concerning student aid programs.

Some aid programs are administered by the College Financial Aid Office under the policies and guidelines established by the state and federal governments; other programs are administered directly by a state or federal agency or outside organization. A few programs may be available on a regional basis only. Eligibility for most financial aid at Ivy Tech is based upon the student's demonstrated financial need. To qualify for any form of financial aid the student must complete either the Financial Aid Form (FAF) or the Application for Federal Student Aid (AFSA) each year and meet additional eligibility requirements (i.e., citizenship or permanent resident status, draft compliance, satisfactory academic progress). Additional information concerning federal, state and college financial aid is available in the financial aid brochure.

Grants and Scholarships

Following are the various forms of aid available to Ivy Tech students.

Pell Grants

Pell Grants represent the largest federal student assistance program for Ivy Tech students. Since the grant is based on the student's need, enrollment status, and cost of education at Ivy Tech, the amount may vary from semester to semester. To apply, the student should file the Application for Federal Student Aid or the College Scholarship Service Financial Aid Form available at any Ivy Tech Financial Aid Office. The Pell Grant applicant will receive a copy of the Student Aid Report in the mail. The Student Aid Report must be presented to the Financial Aid Office before or at the time the student enrolls in order to determine the amount of the grant.

Supplemental Educational Opportunity Grant (SEOG)

SEOG is a federally funded student aid program which enables colleges to make grants to financially needy students to assist in the payment of educational costs. Applicants must file the Application for Federal Student Aid or the Financial Aid Form to establish eligibility. Since the amount of SEOG funds allocated to the College by the federal government is limited, awards vary each year.

Hoosier Scholar Program

The State Student Assistance Commission of Indiana may award from one to three scholarships per high school, based on the size of the graduating class. Candidates are nominated by their high schools. The Hoosier Scholarship is a one-time, nonrenewable merit award in the amount of $500 for one academic year.

Higher Education Award Program (HEA)

Residents of Indiana may apply for Higher Education Awards (formerly called State Grants). Applicants must file the Financial Aid Form by March 1 preceding their enrollment for the following fall semester. Awards are based on demonstrated financial need. Recipients of HEA awards must be enrolled full-time each semester in order to be eligible to receive the grant.

Lilly Endowment Educational Awards

Lilly Endowment Educational Awards are intended to help meet remaining financial need after federal and state dollars are applied. Applicants must file the Financial Aid Forms by March 1 preceding the enrollment for the following fall semester. Recipients of Lilly awards must be enrolled full-time each semester in order to be eligible to receive the grant.

Ivy Tech and Foundation Scholarships

Many Ivy Tech regions award scholarships provided by the Ivy Tech Foundation and local civic and service organizations. Students should contact the regional Financial Aid Office for details concerning availability of these scholarships.

Ivy Tech Grants—in—Aid Program

Ivy Tech provides an extensive grants-in-aid program. Each Ivy Tech Regional Center has a fee remission grant fund for students with special needs arising from unusual circumstances. Fee remissions are available under five separate programs:

Ivy Tech Grant	awarded on the basis of need.
Ivy Tech Award	awarded on the basis of merit.
Ivy Tech Part-time	new students' grants awarded to first-time students enrolling in 1-5 credit hours.
Statutory Fee Remissions	provided to certain groups of students such as children of Disabled Veterans or orphans of deceased police and firefighters as determined by the Indiana Legislature.
Out-of-State Fee Remissions	may be available in certain cases to deserving students who are residents of other states but live in counties which are contiguous to Ivy Tech locations in Indiana.

EMPLOYMENT AND LOANS

Federal College—Work—Study Program

The federally funded College-Work-Study Program provides part-time employment to students who need financial assistance. Job assignments may be within the College or in public non-profit agencies in the community. The student is required to submit the AFSA or the FAF to the Office of Financial Aid, which will coordinate the job placement, taking into consideration the amount of the student's financial need, the student's class schedule, and the student's family or personal obligations. The starting hourly rate will be at least the federal minimum wage level. Employment may consist of, but is not limited to, secretarial and clerical office work, maintenance or custodial work, duties in the Learning Resource Center (LRC), or work as lab assistants. Where possible, students are offered work—study assignments in areas related to their career objectives.

State of Indiana Summer Work—Study Program

Ivy Tech participates with the State Student Assistance Commission of Indiana in the administration of a state-funded Summer Work-Study program for full-time financial aid students who are residents of Indiana. The purpose of this program is to increase employment opportunities in order to meet the remaining financial needs of students who have received state-funded grants and scholarships.

Stafford Loans

Students who attend classes on at least a half-time basis may borrow up to $2,625 per year from private lenders, such as commercial banks, savings and loan associations, or credit unions. The Federal government determines the interest rate on a Stafford loan. Currently the rate is 8 percent. The federal government pays the interest on the loan to the lender during the time the student is in school, provided the borrower has met certain criteria set by the federal government for the interest subsidy.

Students begin repayment six months after graduation or reduction of class load to fewer than six credit hours. Applications for Stafford Loans may be obtained from any Ivy Tech Financial Aid Office or from the student's hometown bank, savings and loan association, credit union, or other financial institution. The regional Financial Aid Office must complete a portion of the loan application and approve it before it can be forwarded to the lender for processing.

Parent Loan for Undergraduate Students (PLUS)/SLS

The PLUS/SLS program is intended to assist students and parents in financing education when all other types of financial assistance have been denied or exhausted. An independent undergraduate student is eligible to borrow a maximum of $6,625 per year through the PLUS/SLS and Stafford programs combined.

Parents of dependent undergraduate students may be eligible to borrow a maximum of $4,000 in addition

to the $2,625 that the student may be eligible to borrow under the Stafford Loan Program. The interest rate is currently 12 percent, and repayment begins within thirty to sixty days after the loan is made. The federal government does not pay an interest subsidy on this loan.

Veterans' Benefits

Students who served in the armed forces may be eligible for veterans' benefits. The Veterans Administration, and, in many instances, the Department of Defense, determine eligibility for veterans.

The amount of monthly educational allowance will depend on (1) enrollment status and (2) individual entitlement of each veteran.

The veteran should meet with the Veteran Affairs Coordinator at the campus of his or her choice at the earliest possible date. The College is responsible for reporting the attendance of veterans and certifying that they are making reasonable progress toward an education objective.

Selected Reserve Educational Assistance Program

Members of the U.S. Army Reserve, Naval Reserve, Air Force Reserve, Marine Corps Reserve, Army National Guard or Air National Guard may be eligible for benefits under Chapter 106 of the VA Regulations. Eligible students should contact any of Ivy Tech's Student Services offices for additional information and applications.

Child of Disabled Veteran (CDV) Benefits

Children of deceased or disabled veterans may be eligible for veterans' benefits. Students should contact the Ivy Tech regional Office of Student Services for further information and assistance in applying for benefits.

Indiana residents who are the children of deceased or disabled veterans, or of veterans awarded the Purple Heart, may be eligible for a fee waiver at Ivy Tech if the parent's death, disability, or Purple Heart award occurred as a result of military service during wartime. Inquiry concerning this benefit may be made at the Ivy Tech regional Office of Student Services.

OTHER SOURCES OF FINANCIAL ASSISTANCE

Police and Fire Fighters' Orphans Benefits

Children of deceased, regularly paid, law enforcement officers and fire fighters are eligible for a fee waiver if the parent's death occurred in the line of duty. The fee waiver is granted only to full-time students under the age of 23. Certification from the appropriate agency must be presented to the College in order to obtain the fee waiver.

Vocational Rehabilitation

Students with disabilities that may be considered handicaps to employment may qualify for benefits through the Indiana Rehabilitation Services Board. The local office of the Division of Vocational Rehabilitation (DVR) establishes the conditions of eligibility and awards assistance, based on individual need. The DVR expects students to apply for the Pell Grant and other forms of financial aid through the school. However, if these resources are not sufficient to meet their needs, the DVR may provide additional funding. Further information is available from the local DVR counselor.

Job Training Partnership Act (JTPA)

Students from economically disadvantaged backgrounds may be able to obtain assistance in acquiring vocational training or in upgrading occupational skills through the Job Training Partnership Act as implemented in October 1983. For further information, the student should contact the local Private Industry Council (PIC) Office.

Trade Readjustment (TRA)

The Trade Readjustment Act provides full tuition and fees, books, and supplies to eligible students. Students should check with their local Indiana Employment Security Division to determine eligibility.

Employer Funded Education

Many employers are willing to fund courses taken at Ivy Tech in full or in part when the training offered relates to the employee's job responsibilities. Interested students should contact their employers to determine if such an arrangement can be made.

Industry—Union Training Funds

Many unions have training funds available for members. Interested students should contact their union regarding availability of training funds for use at Ivy Tech.

APPLICATION PROCEDURES FOR FINANCIAL AID

Application forms are available in the Financial Aid Office at all Ivy Tech regional locations. Because application procedures, deadlines, eligibility regulations, and refund policies vary with different types of student aid programs, interested students are encouraged to contact

the Financial Aid Office at their earliest opportunity. Students should allow from six to eight weeks processing time for most financial aid programs although students are encouraged to apply for assistance at any time. The fall semester marks the beginning of the financial aid award year.

APPEALS—FINANCIAL ASSISTANCE

The following steps are recommended to the student who feels that he or she has received unfair treatment in the financial assistance process:

1. Schedule a personal conference with the regional Financial Aid Manager to discuss and resolve the issue.
2. If Step 1 is unsatisfactory, schedule a consultation with the regional Director of Student Services.
3. If Step 2 is unsatisfactory, schedule a conference with the Student Status Committee. This committee will make a recommendation to the regional Vice President/Dean to resolve the issue.

STUDENT RECORDS

Ivy Tech maintains an educational record for each student who is, or has been, enrolled at Ivy Tech. In accordance with the Family Educational Rights and Privacy Act of 1974, as amended, the following student rights are covered by the Act and afforded to all students at Ivy Tech:

1. The right to inspect and review information contained in the student's educational records.
2. The right to challenge the contents of their educational records.
3. The right to a hearing if the outcome of the challenge is unsatisfactory.
4. The right to submit an explanatory statement for inclusion in the educational record if the outcome of the hearing is unsatisfactory.
5. The right to prevent disclosure, with certain exceptions, of personally identifiable information.
6. The right to secure a copy of the institutional policy.
7. The right to file complaints with the Department of Education concerning alleged failures by Ivy Tech to comply with the provisions of the Act.

Each of these rights, with any limitations or exceptions, is explained in the institutional policy statement, a copy of which may be obtained in the Office of Student Services.

At the discretion of College officials, Directory Information may be provided in accordance with the provisions of the Act without the written consent of the student unless the student requests, in writing, that such information not be disclosed (see below). The items listed below are designated as Directory Information and may be released for any purpose at the discretion of Ivy Tech unless a request for nondisclosure is on file:

Category I. Name, address, telephone number, dates of attendence.

Category II. Previous institution(s) attended, major field of study, awards, honors, degree conferred.

Category III. Past and present participation in officially recognized sports and activities, physical factors of athletes (height and weight), date and place of birth.

Students may request the withholding of Directory Information by notifying the Office of the Registrar in writing, specifying the categories to be withheld, within ten (10) calendar days from the first scheduled day of the term. Ivy Tech will honor the request for one term only; therefore, the student must file the request on a term basis. The student should carefully consider the consequences of any decision to withhold any category of Directory Information. Regardless of the effect upon the student, Ivy Tech assumes no liability for honoring a student's request that such information be withheld. Failure on the part of a student to request the withholding of specific categories of Directory Information indicates the student's approval of disclosure.

In addition, student records are held in security by the College. Transcripts on file with the College from high schools and other institutions of higher education cannot be released by Ivy Tech. A student needing a transcript from high school or another college should request it directly from that institution.

The Office of Student Services will assist students wishing to see and review their academic records and student files. Any questions concerning the student's rights and responsibilities under the Family Educational Rights and Privacy Act should be referred to the Office of Student Services.

DEPENDENCY PROVISION

Ivy Tech reserves the right, as allowed under the Federal Educational Rights and Privacy Act of 1974, to disclose educational records or components thereof, *without written consent* to parents of dependent students as defined according to the Internal Revenue Code of 1954, Section 154 (as amended). However, *All Ivy Tech students will be assumed to be "independent."* A certified copy of the parents' most recent Federal Income

Tax Form establishing the student's dependency status shall be required before any educational records or components thereof will be released to the parent of any student.

ACADEMIC GRADING

The academic grading system has both grades and status codes. Grades reflect the quality of performance and level of competency achieved by students who complete a course. Formal grades will be assigned both in the middle of fall and spring semesters (at the discretion of the technical institute or major instructional center), and at the end of each enrollment period. Instructors determine and assign grades and status based on objective appraisal and evaluation of students' performances. Semester grade reports are sent to each student. The semester grade report is not sent to students who still owe fees.

In all courses, the quality of the student's work is important in determining the grade given. For some courses, quantity of work, speed of work, or both, are considered in determining the grade. Class participation may also be considered by instructors in awarding grades.

In certain instances, a status code will appear on the student's record in place of a grade. Status represents a condition to which no letter grade can be assigned.

Grades

The quality of student performance or competency level, as determined by the instructor at the completion of a course, is indicated by a letter grade of A, B, C, D, or F. Each designation has a numerical value per credit hour, referred to as "quality points." The meaning and quality point value per credit hour of each letter grade are shown in the table below:

Status		Grade Points Per Credit
A	Outstanding achievement	4
B	Above average work	3
C	Average work	2
D	Poor, Below average work	1
F	Failing work	0

Status Codes

Status codes describe the state or condition of a course appearing on the student's record that has not received a grade. Status code indications carry no grade points. The types of status codes and the symbols used to indicate them are shown below:

Status	
I	Incomplete
AU	Audit
S	Satisfactory
U	Unsatisfactory
T	Transfer
V	Verified Competency
NW	No-Show Withdrawal
W	Withdrawal

These non-grades are used for the following reasons:

I—Incomplete

"I" designations are received by students who have actively pursued a course and are doing passing work at the end of the course, but who have not completed the final examination and/or other specific course assignments.

To remove an "I" designation, a student must meet with the instructor to make arrangements to complete the course work. The instructor must submit the grade within 30 calendar days after the end of the term in which the student received the "I" designation.

AU—Audit

Audit (AU) status indicates enrollment in a course for no grade or credit. The fees for audited courses are the same as those for courses taken for credit. Audit status must be declared no later than the end of the first week of classes with approval of the Instructor or Program Chairperson.

NW—No—Show Withdrawal

Instructors will authorize the Registrar to withdraw a student from any course for which the student did not report for the first two weeks of the semester and failed to notify the instructor of intention to continue. This administrative action will be reflected on the official class list. No refund will be processed. A petition for a refund, with documentation for extenuating circumstances, can be filed at the Business Office.

Students can petition to be reinstated by receiving the approval of the instructor and completing the drop/add process.

W—Withdrawal

A "W" status code will be used for student and academic withdrawals.

Student Withdrawal (W) is a terminal status, referring to voluntary student withdrawal by a student beginning at the start of the third week of the course up to the end of the week marking the completion of 75 percent of the course. To be considered officially withdrawn from

a course, the student must file a withdrawal form at the Student Services Office.

After 75 percent of the term has elapsed, a student may withdraw (with the same result as indicated above) only if documented extenuating circumstances are submitted to, and approved by, the Chief Administrative Officer or his/her designee. The "W" status code designation will be entered on the students' academic records.

Instructors may also recommend that a student receive a "W" status code for student nonparticipation in class or student disciplinary reasons, with final approval from the Program Chairperson.

S—Satisfactory

The "S" indicates satisfactory completion of course work in situations where either a status of satisfactory or unsatisfactory (pass/fail) has been arranged by prior agreement. Requests for this type of grading—S/U—must be declared at time of registration.

U—Unsatisfactory

The "U" indicates unsatisfactory completion of course work in situations where either a status of satisfactory or unsatisfactory (pass/fail) has been arranged by prior agreement. Requests for this type of grading—S/U—can only be made for non-program related courses and must be declared at time of registration. The "U" differs from an "F" in that quality points are not computed.

T—Transfer

Transfer (T) status indicates acceptance by Ivy Tech of credit earned at other accredited postsecondary institutions. Transfer credit for grades of A, B, or C can be granted upon evaluation for equivalency and relevance. The final authority for T credit rests with the Chief Academic Officer.

V—Verified Competency

The "V" indicates satisfactory completion of course work in situations such as test-out, credit for experience or training, College Level Examination Program (CLEP), and so forth. Credit gained through this method may be used to satisfy degree requirements. This status is approved by the Chief Academic Officer upon recommendation of faculty advisor, following completion of necessary verification and documentation of competency.

CREDIT HOURS

Credit is described in semester hours (the number of credits taken per semester). The number of credits is determined by the demands of the course, course work and by the number of contact hours—the hours actually spent in the classroom or laboratory.

Credit Hours/Load

A credit hour represents one hour of lecture, two hours of laboratory or three hours of clinical instruction per week for the semester. A three credit hour lecture course, for example, meets 48 hours during the semester (3 X 16).

An average full-time class load per semester in most Ivy Tech programs consists of 12—15 credit hours. To take a class load of more than 17 credit hours, a student must have the approval of the Chief Academic Officer or his/her designee.

Enrollment Status

Enrollment status is determined by registered total semester credits:

Full—time student	12 or more credits per semester
3/4 time	9—11 credits per semester
1/2 time	6—8 credits per semester
Less than 1/2 time	1—5 credits per semester

A first-year student, by definition is one who has completed fewer than 30 semester credit hours; a second-year student is one who has completed 30 or more semester credit hours.

Quality Points

Quality points are numerical values indicating the quality of student performance in credit courses: A=4; B=3; C=2; D=1; F=0. The quality points earned for a course equal the quality point value times the number of credits. A student who earns an "A" in a 4-credit course earns 16 quality points: the quality point value (4) X the number of credits (4) = total quality points (16).

Grade Point Averages

The Grade Point Average (GPA) is a numerical indication of the student's performance in all courses earning quality points. The GPA is obtained by dividing the number of quality points earned by the number of credits earned. The term and cumulative GPA, calculated to three decimal places, will appear on each grade report.

Under extenuating circumstances, a student may petition the Academic Status Committee to exclude up to fifteen (15) semester hours of course work from the cumulative GPA calculation. Course statistics that are excluded from the cumulative GPA calculation as a result of a petition will not be counted as earned and cannot be used to satisfy program requirements for degree

declared students. Please see the Office of Student Services for additional information.

Converting Hours Earned and Attempted and GPA from Quarters to Semesters

To convert cumulative quarter earned and attempted hours to cumulative semester earned and attempted hours, multiply the cumulative hours by .7 and round up to the nearest whole number. For example, the student has earned 67 quarter hours at the end of fall quarter 1989 (8902). The semester hours should reflect 47 hours earned (67 quarter hours earned x .7 = 46.9 semester hours earned and rounded up to 47). This calculation will only be undertaken on the *cumulative* credit hours earned and attempted for all quarters of the student's tenure (i.e., the calculation will not be done on a quarter by quarter basis).

To calculate semester quality points, multiply the semester hours earned (rounded up) calculated above by the student's cumulative GPA and round up to the nearest whole number. For example, the above student has a 2.50 cumulative GPA. Multiply 47 semester hours earned X 2.50 cumulative GPA = 117.5 rounded up to 118 for the student semester quality points.

To calculate semester GPA, divide cumulative semester quality points by cumulative semester hours earned. Calculating on the above, 118 semester grade points divided by 47 semester hours earned = 2.51 semester GPA. (Rarely will the semester GPA equal the quarterly GPA. The student will benefit by this calculation.)

Improving a Grade

Students, with the approval of faculty advisors, may attempt to improve D or F grades by repeating courses (allowable once in most programs). Financial Aid recipients, however, should review their situations carefully since payment for repeated courses can be disallowed. Permanent student records contain complete files on all activity. The student's grade point average will reflect the highest grade earned.

Dean's List

The Dean's List, prepared and published each semester, gives recognition to students who achieve a minimum 3.50 grade point average or higher with no F's while earning 12 or more credits during the semester.

Grade Reports

Final grades are mailed to the address on the registration form. Grade reports are not sent if there are outstanding financial obligations to the College.

Attendance

Regular attendance is expected at scheduled class meetings or other activities assigned as part of a course of instruction. Attendance records are kept by instructors.

If personal circumstances may occasionally make it impossible to attend scheduled classes and activities, the College expects the student to confer with instructors in advance when possible. Instructors can offer students the option of making up the material missed. When circumstances are unforeseen, students should consult with instructors to arrange make-up work, if possible.

Absences may be considered by instructors in awarding grades and considering involuntary withdrawal. Students who must interrupt their Ivy Tech training to fulfill Reserve and National Guard annual tour requirements should present official military orders to their instructors prior to departure for duty. Students are not excused from completion of the course work and should make arrangements with their instructors to complete all work.

STANDARDS OF PROGRESS

Students who have declared a certificate or degree objective and who have fifteen (15) or more cumulative credit hours attempted must maintain a 2.00 minimum cumulative grade point average (GPA) to be considered in satisfactory academic standing. Students receiving financial aid must demonstrate satisfactory progress toward completion of a program within a specified time frame, based on their enrollment status. Also, students must successfully complete the minimum number of credit hours required for that status each semester. All students are expected to maintain a cumulative 2.00 GPA for graduation eligibility. Questions on maintaining standards of progress and academic standing should be addressed to the Office of Student Services.

Special Problems

The Director of Student Services is available to help with special problems, granting exceptions, and filing grievances (see Student Grievances). Special problems, exceptions, and grievances are ultimately the responsibility of the Chief Administrative Officer of the region and designated staff and committees.

GRADUATION

The Associate in Science degree, the Associate in Applied Science degree, or Technical Certificate is awarded by the College to students who meet graduation and certification eligibility requirements. Graduation ceremo-

nies are held at least once a year. Graduating students are charged a fee to cover the cost of the ceremonial cap and gown.

A student is considered eligible for graduation when the requirements for graduation and certification have been fulfilled at the selected program level. Each student entering the final semester of training prior to graduation will complete an Application for Graduation form. The application will be certified by the student's program advisor and forwarded to the Office of Student Services, where the appropriate diploma will be prepared.

To graduate with an Associate in Science or an Associate in Applied Science degree, the student must:

1. attain a minimum grade point average of 2.0 in the required technical and general education courses, with not more than one course in each of these areas at a "D" or lower performance level;
2. complete successfully all courses within certification requirements with a minimum grade point average of 2.0;
3. earn the last 15 credits as a regular student of Ivy Tech, rather than by test-out or other means of advanced placement;
4. complete successfully the Ivy Tech certification requirements;
5. satisfy all financial obligations to the College.

To graduate with a Technical Certificate, the student must:

1. attain a minimum grade point average of 2.0 in the required technical courses with not more than one course at a "D" or lower performance level;
2. complete successfully all courses within certification requirements with a minimum grade point average of 2.0;
3. earn the last 15 credits as a regular student of Ivy Tech, rather than by test-out or other means of advanced placement;
4. complete successfully the Ivy Tech certification requirements;
5. satisfy all financial obligations to the College.

STUDENT SUPPORT SERVICES

Career Counseling

The Office of Student Services in each region offers counseling to all interested students. Students may obtain individual counseling and/or assessment to assist them in identifying their abilities or occupational interests. Counseling and assessments are also helpful in developing realistic education and career plans and occupational outlook data. Students are encouraged to seek assistance in selecting an occupation and the necessary training by contacting the Office of Student Services.

In addition to the counseling program offered by the Office of Student Services, the College utilizes a faculty advisor system. On admission, each degree student is assigned a faculty advisor, whose purpose is to:

1. assist the student in course selection and program planning;
2. guide the student in meeting the requirements for graduation as prescribed by the College;
3. insure that appropriate technical and general education electives are included in the chosen course of study.

Placement

Candidates for graduation who desire placement assistance should contact the Office of Student Services, which will:

1. advise candidates of the College placement services;
2. distribute registration forms for the placement service;
3. provide occupational information, including employment trends and local and state occupational outlook data;
4. assist the registered candidate in preparing a packet of credentials for use in finding a job. The packet may include:
   a. a resume of the candidate's education and employment experience;
   b. personal letters of recommendation verifying the student's employability;
5. create folders containing original copies of the candidate's credentials for all registered candidates;
6. prepare copies of credentials released by the candidates for referral to prospective employers. Alumni may update their credentials whenever they wish to use the placement service.

Students registered with the College Placement Office will be informed of employment opportunities known to the regional Placement Offices.

Employers who register with the Placement Office are given the names of all qualified candidates without regard to sex, race, age, national origin, or handicap. Registered students are eligible for interviews with appropriate prospective employers.

Library

The library at each region is a Learning Resource Center (LRC). New acquisitions are carefully selected to

augment the needs of the students in the technologies offered and for the skills advancement program.

Special features of the LRC include career exploration materials, interlibrary loans, periodicals both general and technical in focus, leisure reading offerings, and audio-visual materials and equipment. Basic Skills Advancement centers are located in the LRCs or a related area.

College Bookstore

The College maintains a bookstore in each regional institute where students may buy textbooks and supplies. College sweaters, jackets, souvenirs, and other items may also be available for purchase.

STUDENT ORGANIZATIONS

Organizations and Activities

The College recognizes the educational, recreational, and social values of student organizations and extracurricular activities which complement the institution's academic programs. Students are encouraged to participate in any or all phases of the student activities program as long as participation does not interfere with studies.

All student organizations operate under the policies and guidelines set for the College by the State Board of Trustees. Approval by the Student Senate and the administration is required of all student organizations seeking to make use of the College facilities. All approved organizations must be open for membership to all eligible candidates and must make available to the Student Senate all records of officers, membership, and financial transactions.

Student Senate

Students in each region are provided opportunities to participate in student government through membership in the Student Senate. The Student Senate is the representative governing body of the students. Student Senate representatives are elected or selected according to the bylaws of each regional Student Senate constitution and serve as stated in those bylaws.

The student body membership may consist of representatives of the first-year class, the second-year class, each program area and an advisor as established in the bylaws.

The Student Senate was established by students to encourage participation in student government and to promote College spirit and recognition. The Student Senate exercises the authority, unless otherwise delegated, to legislate on student matters, subject to the approval of appropriate College administrative offices.

The constitutions of all student organizations must be approved by a quorum of the Student Senate, consisting of a simple majority of the total membership and one staff advisor, or as otherwise stated in the bylaws.

The functions of the Student Senate include:

1. communication of bona fide concerns of the student body and suggestions for improvement to appropriate College officials;
2. approval of those student organizations deemed beneficial to student life and worthy of being a part of the College;
3. assurance that copies of the constitution, bylaws, and statement of purpose and objectives of each recognized student organization are on file in the Office of Student Services;
4. referral of student grievances concerning disciplinary matters or student status to the Committee on Student Status; referral of other types of student grievances to appropriate College officials;
5. planning and conducting of appropriate extracurricular student activities;
6. submission of student activity budgets for review and approval by the regional administration.

Intramural Sports

College sports activities consist of intramural sports sponsored by the Student Senate. Leagues can be formed when student interest justifies their organization. All sports activities of the College must be approved and sponsored by the Student Senate and the administration.

Class Organizations

The primary purpose of class organizations is to promote classwide social activities and sports functions. Each first-and second-year class may elect a class president, vice-president, secretary-treasurer, class reporter, and representatives-at-large for the Student Senate. Class organizations must be sponsored by the Student Senate.

Clubs

Students wishing to organize hobby, social, or special interest clubs should submit proposals to the Student Senate, which will determine whether sufficient interest exists to form or continue a club. The Student Senate is authorized to charter the club upon approval by the administration. Each club must have the following elected officers: president, vice-president, secretary-treasurer,

club reporter, and a Student Senate representative. Each club must also have a staff advisor.

Social Activities

All group activities of the College must be approved and sponsored by the Student Senate and the administration. Classes, clubs, and other groups should plan and conduct social activities pertaining specifically to their members. The Student Senate organizes and conducts social activities and gatherings in which all students and their guests may participate.

Professional and Trade Societies

Student chapters of various professional and trade societies will be formed in the same manner as other student organizations and are subject to the same requirements.

Housing

While Ivy Tech is a commuter campus and does not operate residence halls, the Student Services Office may be able to answer questions concerning housing. Ivy Tech accepts no responsibility for locating, approving, or supervising local student housing.

Student Parking

As a part of registration, students may need to register their motor vehicles. Some campuses will require a parking sticker from the cashier's office. A special permit is required to park in the handicapped zone. Stickers are to be displayed in the vehicle while it is parked on campus and students are expected to park only in designated student parking areas. Vehicles improperly parked in areas reserved for the handicapped, visitors, or others may be towed away at the owner's expense.

Student Insurance

For students registered in credit courses at Ivy Tech, the College provides insurance in a designated amount for injuries sustained while participating in College-sponsored activities. The activity must take place on College premises or on any premises designated by the College. Students are also covered while traveling to and from College-sponsored activities as a member of a group under College supervision.

It is the student's responsibility to report injuries promptly to the instructor or to the Office of Student Services.

The insurance is for a specified minimum amount of coverage. It is not intended to replace insurance coverage students may already have. It is suggested that students review their own coverage.

The Master Policy for this insurance is issued to Indiana Vocational Technical College and is on file at the office of the Director of Personnel Services at College Central Offices. The description of the hazards insured, benefits, and exclusions is controlled by the Master Policy. Should students have questions, they may contact the regional Office of Student services.

An insurance company offers health insurance to Ivy Tech students. Insurance coverage is purchased directly from the insurance company by the student. Application forms and brochures explaining coverage and rates are available through Student Services during course registration periods. Coverages and rates are subject to change.

Emergency Closing of Campus

It is possible that severe weather conditions or other emergencies will make it necessary to close a campus. Each region has designated local radio stations that will announce information on closings.

STUDENT RIGHTS AND RESPONSIBILITIES

Standards of Conduct

Students enrolled at Indiana Vocational Technical College are expected to conduct themselves in a mature, dignified, and honorable manner. The reputation of the College in the community depends in large part upon the behavior of its students.

Students are subject to College jurisdiction on College matters while enrolled at Ivy Tech. The College reserves the right to take disciplinary action against any student whose conduct, in the opinion of Ivy Tech representatives, has not been in the best interests of other students or the College. Disciplinary action may consist of verbal reprimand, restitution for damages, restriction of privileges, suspension, or dismissal. Students, in turn, have the right of due process.

All Ivy Tech students are expected to abide by the following College rules of conduct.

College Rules

1. ALCOHOLIC BEVERAGES Any student found guilty of drinking, being under the influence of, or possessing intoxicating beverages on College property is subject to disciplinary action and state law.
2. ILLEGAL USE OF DRUGS The illegal use of drugs is strictly prohibited on College property. Any student found using, under the influence of, in possession of, or distributing illegal drugs is subject to disciplinary action and state law.

3. SMOKING Students may smoke in private offices, conference rooms, and other areas as designated by the Vice President/Dean. Smoking is generally prohibited in carpeted areas and in posted "No Smoking" areas, in accordance with fire regulations and consideration for campus environment.
4. ASSEMBLY Persons shall not assemble in a manner that obstructs the free movement of others about the campus, inhibits the free and normal use of the College buildings and facilities, or prevents or obstructs the normal operations of the College.
5. SIGNS Students may not erect signs on campus or display signs or posters, except on designated bulletin boards, without the authorization of the Vice President/Dean or designee. Also, students shall not deface, alter, tamper, destroy, or remove any sign or inscription on College property.
6. SOLICITATION OF FUNDS No student or student organization may use campus facilities or schedule activities to solicit funds without the approval of the Vice President/Dean or designee.
7. ARMS/DEADLY WEAPONS Firearms (except for those possessed by police officers) are strictly prohibited on College property or at any College-sponsored activity held elsewhere. Any student possessing deadly weapons at these locations is subject to disciplinary action.
8. CHEATING Any student found cheating on papers or tests is subject to disciplinary action. Such action may be taken in accordance with College procedures as deemed necessary by the instructor.
9. COUNTERFEITING AND ALTERING Students shall not copy or alter, in any manner, shape, or form, any record, document, or identification form used or maintained by the College.
10. THEFT OF PROPERTY Any theft of personal or College property will be treated as a violation of College rules.
11. VANDALISM The destruction or mutilation of College books, magazines, equipment, or buildings is prohibited. Such action may result in restitution and/or other disciplinary measures.
12. USE OF COLLEGE FACILITIES Students are permitted on campus during normal College hours and at other times established in the College calendar. Students wishing to utilize College facilities at other times must request permission from the Vice President/Dean or designee.
13. FINANCIAL RESPONSIBILITY Students owing fees, fines, or loans shall not be permitted to register for a succeeding session. Grades, records, degrees, etc., will not be awarded until debts to the College are paid.
14. MOTOR VEHICLES The College has established student, staff, and visitor parking areas. All persons are required to park in their respectively designated areas and to adhere to College parking regulations. Posted speed limits must be obeyed.

Violations

The College maintains jurisdiction over matters such as, but not limited to, alcoholic beverages, illegal use of drugs, smoking, financial responsibilities, motor vehicles, assembly, soliciting, use of College facilities, the posting or erection of signs, theft, arms/deadly weapons, cheating, counterfeiting, and vandalism.

Students are protected from those who might violate laws and ordinances. Violators shall be subject to prosecution by the appropriate law enforcement officials.

Anyone found in violation of College regulations shall be subject to disciplinary action by the College through due process procedures for student conduct violations. The Vice President/Dean designee in the Office of Student Services will make available copies of the student conduct regulations to all students not later than the first day of instruction.

DUE PROCESS PROCEDURES FOR STUDENT CONDUCT VIOLATIONS

1. Cases or appeals of student misconduct and/or lack of academic integrity are to be referred to the appropriate designee of the Vice President/Dean or to the Chair of the Student Status Committee for evaluation. This College representative:
   a. will be responsible for all initial disciplinary procedures;
   b. may recommend temporary suspension of a student to the Vice President/Dean for a period of time until the Student Status Committee can meet.
   c. may recommend to the Vice President/Dean (on recommendation of the instructor) that a student be withdrawn from a course of program or from the College for disciplinary reasons.
2. Students recommended for dismissal will be notified by their advisors in writing. Students will be given an opportunity to appeal the decision of the Student Status Committee if they so choose.
3. The Student Status Committee deals with all cases relating to disciplinary actions or the academic status of students. Each regional institute has a Student Status Committee that makes recommendations to the Vice President/Dean.

a. The Student Status Committee will be composed of at least six members, including two full-time instructional staff members and two administrative staff persons appointed by the Vice President/Dean of the region. The additional two members will be students designated by the Student Senate. The Committee's review and subsequent disposition of a formal complaint will begin no later than thirty (30) days after receipt of the written complaint. Staff legal counsel, as needed, will be available to the Committee.

b. The Student Status Committee will assure the student due process. A written statement will be presented to the student by the chairman of the Student Status Committee. The student will be invited to speak on his or her own behalf.

c. The Student Status Committee will issue a recommendation to the Vice President/Dean following its deliberation. Disciplinary probation or dismissal from the College will be final only after review by the Vice President/Dean, who may approve or disapprove the recommendation of the Student Status Committee. (Students dismissed for disciplinary reasons will not be entitled to refunds.)

d. The student will be informed in writing of the decision of the Student Status Committee and of the subsequent recommendations to the Vice President/Dean, whose decision is final. A copy of the written recommendations from the committee will be filed in the student's folder in the Office of Student Services.

e. If the student disagrees with the Student Status Committee recommendation, he or she may file a complaint with the regional Vice President/Dean within 72 hours after notification of the Student Status Committee's decision.

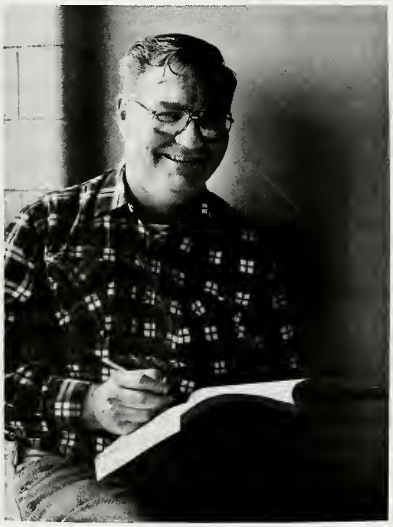
f. Exceptions to these rules may be made in extenuating circumstances at the discretion of the Vice President/Dean or his designee upon request by the party involved.

Student Grievances

Students may bring legitimate grievances to the attention of their instructors or other advisors. Time will be provided for a grievance conference within two weeks of the complaint. The purpose of the conference is to discuss the problem and to find, if possible, a mutually satisfactory resolution.

If the grievance concerns an instructor or an advisor, the student may request a conference with a department head, chairperson, the Director of Student Services, or the Director of Instruction, as deemed appropriate. The conference will be held within two weeks of notice of the complaint.

The student who feels his or her grievance has not been adequately addressed by these methods may follow a prescribed grievance procedure. A full explanation of this procedure is available from the Office of Student Services.



INSTRUCTIONAL PROGRAMS

In keeping with its mission and goals, the College serves people 16 years and older with educational programs consistent with projected job requirements and personal interests. Ivy Tech programs complement secondary vocational, two-year engineering technology, four-year programs, and basic adult education programs. The purposes of Ivy Tech's technology programs are to develop competent workers for initial employment, to upgrade the skills of those already employed, and to provide a foundation of thinking and analytical skills to meet the requirements of society's expanding knowledge base. Ivy Tech programs provide skills training and instruction in recent technological advancements and developments.

Ivy Tech programs are designed to meet the needs of the student population, accommodating those who wish to enroll in a few classes as well as those who prefer a full program. Credit programs normally culminate in the Associate in Science degree, the Associate in Applied Science degree or the Technical Certificate. The College's 50 degree programs are offered in these four divisions:

Business, Office and Information Systems Technologies;
Visual Communications Technologies;
Human Services and Health Technologies;
Applied Science and Technologies.

Short-term training is available in selected credit courses, in sequences of credit courses, and in custom-designed credit courses for local businesses and industries. Also available are contract training programs, and non-credit institutional activities, such as seminars, workshops, and conferences.

In addition to program and custom-designed courses, Ivy Tech offers basic skills instruction for students who request or require academic support and/or study skills to assist them in successful completion of a regular program of study. Additionally, enrollment in certain basic skills courses are designed to prepare the student for the GED examination.

Associate in Science (AS) Degree Programs

Associate in Science Degree Programs prepare students for technical career opportunities and also enable students who have an interest and ability to transfer a predetermined amount of Ivy Tech credits to cooperating four-year institutions. The degree requires the satisfactory completion of a program of study representing a planned progression of learning experiences. These technical programs emphasize cognitive skills intended as pre-baccalaureate study and provide courses equivalent to those prescribed in the lower division of the receiving four-year college or university. Students enrolling in the program are required to take the General Education courses with a recognized four-year institution.

On December 11, 1987, the Indiana Commission for Higher Education authorized an expansion of the College to offer an Associate in Science Degree. Currently the College has approval to award the Associate in Science Degree in Early Childhood Development, Nursing, Computer Programming Technology, Commercial Art Technology, Accounting Technology, Marketing Technology and Architectural Drafting Technology at selected Ivy Tech sites. Students should contact Regional Instructional Offices to receive information about additional transfer-oriented programs being developed at other Ivy Tech locations.

Associate in Applied Science (AAS) Degree Programs

Associate in Applied Science Degree Programs prepare students for career mobility within occupational clusters at the technician or technology level. The programs offer training in recognized technologies and specialities with emphasis on analysis, synthesis, and evaluation. The program content, which is approximately 75 percent technical and 25 percent general education, provides both depth and breadth in conceptual and manipulative skills. The general education courses, offered in the areas of communications, humanities, mathematics, life and physical sciences, and social sci-

ences equip students with the occupation-related technical and social skills they need to compete successfully in the job market. Elective courses, determined regionally, provide flexibility in the programs to meet the specific needs of local employers.

Technical Certificate (TC) Programs

The Technical Certificate Programs provide training in conceptual and manipulative skills for specific occupations. Each program contains a sequence of required courses in a recognized specialty within one of the technologies taught at the College. The program content, which includes general education instruction, is designed to develop competency in the comprehension of and technical skills in that specialty.

Short-Term Programs

Ivy Tech provides short-term programs for individuals who desire to develop competencies in a specific area. These programs are less than 32 semester credits in length. Instruction is delivered through methods that include regular courses and specifically designed courses. Many of these courses are based on a sequence of learning experiences determined by a certifying state or national association or organization. Completion of certain short-term programs qualifies a student to sit for a certification exam in a specific area. The number and types of short-term programs vary among the Ivy Tech locations.

Business and Industry Training Programs

Ivy Tech offers specialized training services for business and industry. Directors of Business and Industry Training are responsible for the development of custom-designed programs and services that meet the training needs of local businesses. Through its offices statewide, the College provides training services in which Ivy Tech consults, designs, produces, conducts, and evaluates courses specifically prepared to satisfy employer needs, on a one-time or on-going basis. The Directors work with business and industry, trade unions, and public and community economic development groups to assess training needs and to deliver training when and where it is needed, often in-plant.

The services provided by the Business and Industry Training programs help ensure that the skills of employees of Indiana firms are current with changing technology. Instruction that best meets a company's specific needs is delivered through methods that might include regular courses, short-term courses, seminars, conferences and the use of mobile computer labs.

As the third largest of Indiana's public institutions of higher education, with more than 25 years of experience in vocational and technical instruction, Ivy Tech has been and continues to be a leader in promoting Indiana's economic development by providing comprehensive training services to Indiana businesses and industries.

For detailed information, contact the Director of Business and Industry training at the Ivy Tech regional center near you.

Basic Skills Advancement Program

Ivy Tech technical institutes and major instructional centers offer Basic Skills instruction and services designed to prepare people with skills and attitudes that meet the General Education course entry requirements. In addition, the Basic Skills Advancement Program offers assistance to help students get from "where they are" to "where they want to be." Ivy Tech Basic Skills courses are non-degreed credit courses, meaning the credit awarded does not count toward a degree/graduation.

Services provided through the program include diagnostic testing and assessment, financial aid counseling, career counseling, placement services and instruction. The need for these services may be identified at the time of admission; however, a student may utilize any or all services upon encountering academic difficulty during a course of study. Professional Basic Skills Advancement instructors and laboratory technicians provide supplemental instruction in the areas of math, communications, sciences, GED preparation, and study skills. The delivery of instruction may be a Basic Skills Advancement course in a classroom setting, it may be offered to students one-on-one as tutorial assistance, or as a self-paced study in the Basic Skills Center. For further information about the College's Basic Skills Advancement Program, the student should contact either the Student Services offices or the Basic Skills Center.

Programs

On the following pages are the current listings of credit programs offered by Ivy Tech at College locations. Contact the center nearest to you for information concerning program offerings in your area.

COURSE NUMBERING SYSTEM

Courses are identified by a three-letter prefix that designates the program area, followed by three numbers for course identification. Courses numbered in the 100 series are first year and 200 series numbers indicate second year courses. Courses numbered 001 to 099 indicate Basic Skills Advancement Courses.

Prefix	Program Title
Division of Business, Office and Information Systems Technologies	
ACC	Accounting Technology
CPT	Computer Programming Technology
CUL	Culinary Arts Technology
DSM	Distribution Management
HMM	Hotel/Motel Management
IST	Industrial Supervision Technology
INF	Information/Data Management
MKT	Marketing Technology
LEG	Paralegal Technology
SEC	Secretarial Sciences
BUS	Small Business Operations
SPC	Statistical Process Control Technology
Division of Visual Communications Technologies	
AVC	Commercial Video Technology
ART	Commercial Art Technology
CIP	Commercial Photography
GRA	Graphic Media Production Technology
INT	Interior Design Technology
Division of Human Services and Health Technologies	
CCT	Child Care Technology
ECD	Early Childhood Development
DEN	Dental Assistant
FST	Food Service Technology
HCA	Health Care Administration Technology
HST	Human Services Technology
MEA	Medical Assistant
MLT	Medical Laboratory Technician
MHR	Mental Health Rehabilitation Technology
NUR	Nursing, Associate of Science in
PNU	Nursing, Practical
RAD	Radiologic Technology
RES	Respiratory Care
SUR	Surgical Technology
Division of Applied Sciences and Technologies	
AGR	Agricultural Equipment
AFS	Applied Fire Science Technology
AMT	Automated Manufacturing Technology
ABR	Automotive Body Repair Technology
AST	Automotive Service Technology
BAR	Barbering Technology
BCT	Building Construction Technology
CIJ	College/Industry Job Title Program

Prefix	Program Title
DPT	Diesel Power Technology
DCT	Drafting/CAD Technology
ELT	Electronics Technology
HEA	Heating/Air Conditioning/Refrigeration Technology
ILT	Industrial Laboratory Technology
IMT	Industrial Maintenance Technology
MTT	Machine Tool Technology
MIN	Mining Operations Technology
PMT	Plastics Manufacturing Technology
PTT	Pollution Treatment Technology
WLD	Welding Technology

Instructional Support

BSA	Basic Skills Advancement
ENG	Communications
HUM	Humanities
MAT	Mathematics
SCI	Life and Physical Sciences
SOC	Social Sciences
IND	Business and Industry
REL	Related Education

DIVISION OF BUSINESS, OFFICE AND INFORMATION SYSTEMS TECHNOLOGIES

Career opportunities in business and offices are expanding rapidly for those who have the technical skills to meet the demands of the automated office. Programs offered through Ivy Tech's Division of Business, Office, and Information Systems Technologies reflect the needs of Indiana businesses. The student is advised to contact the nearest center concerning specific course and program offerings.

ACCOUNTING TECHNOLOGY

The Accounting Technology program develops an understanding of accounting principles, business law, communications, business equipment, and related areas of study in the field. Instruction is offered in computerized accounting systems. Technical skills in financial accounting, cost accounting, and tax preparation are emphasized.

Typical duties in accounting include maintaining journals and ledgers, processing banking transactions, billing, preparing payroll, maintaining inventory records, purchasing, processing expense reports, preparing financial statements, and analyzing managerial reports. Position titles may include junior or staff accountant, junior auditor, cost accounting clerk, bookkeeper, payroll clerk, inventory clerk, accounts receivable clerk, accounts payable clerk, and financial management trainee.

The Division of Business, Office and Information Systems Technologies offers an Accounting Technology program that leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas.

Programs are offered in Anderson, Bloomington, Columbus, Evansville, Fort Wayne, Gary, Hammond, Indianapolis, Kokomo, Lafayette, Lawrenceburg, Logansport, Madison, Marion, Muncie, Richmond, Sellersburg, South Bend, Terre Haute, Valparaiso, and Warsaw.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (27 Credits)

Prefix	No.	Title	Semester Credits
ACC	101	Accounting Principles I	3
ACC	102	Accounting Principles II	3
BUS	102	Business Law	3
ACC	105	Income Tax I	3
ACC	201	Intermediate Accounting I	3
ACC	202	Intermediate Accounting II	3
ACC	203	Cost Accounting I	3
ACC	213	Electronic Spreadsheets in Business	3
INF	101	Introduction to Microcomputers	3

General Education Course (15 Credits)

Prefix	No.	Title	
SOC	XXX	Elective (Regionally Determined)	3
MAT	XXX	Elective (Regionally Determined)	3
ENG	101	English Composition	3
ENG	103	Speech	3
SOC	101	Human Relations or	
SOC	102	Psychology or	
SOC	104	Sociology (Regionally Determined)	3

Regional Electives (22 Credits) 22

Total Credits 64

ACCOUNTING TECHNOLOGY COURSE DESCRIPTIONS

ACC 101—ACCOUNTING PRINCIPLES I

3 Credits
Introduces the fundamental principles, techniques, and tools of accounting. The mechanics of the accounting cycle include collecting, recording, summarizing, analyzing, and reporting of information pertaining to service and mercantile enterprises. Internal control, deferred charges, notes and interest, valuation of receivables, payrolls, inventories, and plant assets are also covered.

ACC 102—ACCOUNTING PRINCIPLES II

3 Credits
Continues the study of accounting to include partnership and corporate accounting systems. Financial statements including the cash flow statement are prepared and analyzed. Topics covered include long-term liabilities and investments. Cost, managerial, branch and nonprofit accounting techniques may be introduced.

ACC 105—INCOME TAX I

3 Credits
Offers an overview of federal income tax law for individuals including: taxable income, capital gains and losses, adjustments, standard and itemized deductions, tax credits and appropriate tax forms. Also introduced are tax concepts needed by a sole proprietorship.

ACC 106—PAYROLL ACCOUNTING

3 Credits
Covers the calculating and reporting of payroll including various federal and state withholding taxes, employer payroll taxes, typical insurance and other arrangements affecting the preparation of payroll registers and employees' earnings records. May include computerized payroll.

ACC 107—ACCOUNTING FOR RECORDKEEPING

3 Credits
This course is for non-accounting majors, with special emphasis on the trade professions. The cash basis of recordkeeping for materials, payroll, depreciation and financial statements will be covered. Also included will be an introduction to the operation of petty cash funds, basic cash budgeting, and controlling cash through the use of a checkbook. The following may be covered: financial ratios, construction accounting methods, and computing customer estimates.

ACC 108—CAREER ESSENTIALS OF ACCOUNTING

3 Credits
This course is an introduction to the basic principles of accounting as utilized in a variety of office settings. The course includes principles of debit and credit, double entry bookkeeping, use of journals and analyzing transactions. Uses of ledgers, posting procedures, petty cash, banking procedures, payroll, depreciation, work sheets, balance sheets, and income statements are covered as well.

ACC 109—PERSONAL FINANCE

3 Credits
Examines the process of setting and achieving financial goals. Emphasizes financial management, budgeting for current expenses, projected cash flow and management of short and long-term credit. Includes use of insurance to reduce risks and vehicles for saving and investing.

ACC 111—ACCOUNTING PRINCIPLES LAB I

1 Credit
Presents a series of planned accounting learning problems and activities to accompany concepts and theories included in an accounting principles course. The touch-method of numeric input on a calculator may be introduced, and some computerized problems may be included.

ACC 112—ACCOUNTING PRINCIPLES LAB II

1 Credit
This course presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in the Accounting Principles II course. Computerized problems may be used.

ACC 113—INCOME TAX ACCOUNTING LAB

1 Credit
This course presents a series of planned accounting learning problems and activities to accompany concepts and theories included in the Income Tax course. Computerized problems may be used.

ACC 114—PAYROLL ACCOUNTING LAB

1 Credit
Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in the Payroll Accounting course. Computerized problems may be used.

ACC 118—FINANCIAL CONCEPTS FOR ACCOUNTING

3 Credits
This course develops math skills needed in the busi-

ness field and serves as a basis for course work in business. It includes the study of business applications using rational numbers, algebraic equations, time value of money concepts, and basic statistics.

ACC 201—INTERMEDIATE ACCOUNTING I

3 Credits
Studies accounting principles and applications at an intermediate level pertaining to the income statement and balance sheet, cash and short-term investments, receivables, inventories, plant assets and intangible assets. Included are analysis of bad debts, inventory valuation, repairs and maintenance, depreciation of plant assets and present value applications.

ACC 202—INTERMEDIATE ACCOUNTING II

3 Credits
Continues studies of Intermediate Accounting I and includes long-term investments, current and contingent liabilities, long-term debt, stockholders equity, special accounting problems and analysis, statement of cash flows and financial statement analysis. Also included are corporate capital and treasury stock transactions, dividends, earnings per share, accounting for income taxes, corrections of errors and creation of financial statements from incomplete records.

ACC 203—COST ACCOUNTING I

3 Credits
Examines the manufacturing process in relation to the accumulation of specific cost of manufactured products. Various cost accounting report forms, material, labor control, and allocation of manufacturing costs to jobs and departments are studied.

ACC 204—COST ACCOUNTING II

3 Credits
Continuation of Cost Accounting I. Studies the master or comprehensive budget, flexible budgeting and capital budgeting. Tools for decision making and analysis are emphasized. Human resource accounting is introduced.

ACC 205—SEMINAR IN ACCOUNTING

1 Credit
Allows accounting students to pursue (a) specific area(s) of interest at a more advanced level in Accounting.

ACC 206—MANAGERIAL ACCOUNTING

3 Credits
This course provides an understanding of accounting records and management decision making, with topics including internal accounting records and quantitative business analysis.

ACC 207—ACCOUNTING FOR GOVERNMENT AND NONPROFIT ENTITIES

3 Credits
This course will emphasize the similarities and differences between government and nonprofit and commercial accounting methods and procedures. The student will be exposed to the basic fund accounting cycle for the general fund and other special funds.

ACC 208—INCOME TAX II

3 Credits
Continues Income Tax I. Studies procedures and problems pertaining to federal and state income tax laws for partnerships and corporations. Includes a review and a more in-depth study of concepts related to proprietorships covered in Income Tax I.

ACC 209—AUDITING

3 Credits
Covers public accounting organization and operation, including internal control, internal and external auditing, verification and testing of the balance sheet and operating accounts and the auditor's report of opinion on the financial statements.

ACC 210—MONEY & BANKING

3 Credits
Monetary and banking theories as they relate to present-day domestic and international problems. Topics include banking operations, price changes, international monetary relationships, and application of monetary and fiscal policy.

ACC 212—BUSINESS FINANCE

3 Credits
Basic tools and techniques of financial analysis and management are introduced as are sources of financial and economic theory as applied to business finance. Included are conceptual materials related to valuation, capital structure formulation and risk-return considerations.

ACC 213—ELECTRONIC SPREADSHEETS IN BUSINESS

3 Credits
Provides instruction in the use of all modules of a spreadsheet software package including spreadsheet, graphics, and database operations, applying these modules to business problems. The student will be instructed with an input-processing-output orientation and will develop user skills in quick, efficient business problem solving using electronic spreadsheet technology.

ACC 214—CONSUMER & COMMERCIAL CREDIT

4 Credits
Theory, principles, and practice of consumer and commercial credit related to business activity and economic impact are explored. Examines managerial functions of collecting and controlling credit to consumers and business. Emphasizes credit plans, credit and sales, short-term and intermediate credit, and legal aspects of credit. Intended for retail, service, wholesale, and manufacturing firms extending credit to clients.

ACC 215—CREDIT PROCEDURES & COLLECTIONS

3 Credits
Examines credit as a means of extending purchasing power i.e., increased buying power, immediate use of money, merchandise, or services and delayed payment. Concepts of credit, principles and methods of credit administration involving individuals and businesses are examined. Includes information on credit policy, credit control, credit decision-making, and legal remedies.

ACC 216—CREDIT MANAGEMENT

3 Credits
Functions of acquiring cycle of credit and management function of control cycle are explored in seminar/project setting. Combines lectures, discussions, individual research and projects with written and oral presentation of findings and results.

ACC 217—INTERMEDIATE ACCOUNTING LAB I

1 Credit
This course presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in Intermediate Accounting I. Computerized problems may be used.

ACC 218—INTERMEDIATE ACCOUNTING LAB II

1 Credit
This course presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in Intermediate Accounting II. Computerized problems may be used.

ACC 219—COST ACCOUNTING LAB

1 Credit
This course presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in Cost Accounting I. Computerized problems may be used.

ACC 220—SPECIAL APPLICATIONS ACCOUNTING LAB I

1 Credit
This course presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in an accounting course. Computerized problems may be used.

ACC 221—SPECIAL APPLICATIONS ACCOUNTING LAB II

1 Credit
This course presents a series of planned advanced accounting learning problems and activities designed to accompany concepts and theories included in an accounting course. Computerized problems may be used.

ACC 222—ACCOUNTING SOFTWARE APPLICATIONS

2 Credits
Accounting problems will be solved using software similar to software currently being used in business. Planned learning activities will include installation, operation and analysis of an accounting software package.

ACC 223—ADVANCED TOPICS IN ACCOUNTING

2 Credits
Discusses topics of current interest in accounting. Attention is given to special interest projects for students in accounting. Field trips, guest speakers, audio-visual activities, and seminars may be utilized.

AC 224—CONSTRUCTION BIDDING

3 Credits
Examines bidding procedures, contract documents, contracts, bonds, and insurance. It also follows a format of describing the materials and how the different types may affect the bid, installation procedures as they may affect the bid, the unit of measure of the work, estimating the quantity of materials, and the relationship of the specifications.

ACC 281-293—SPECIAL TOPICS IN ACCOUNTING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

ACC 298—FIELD STUDY/COOPERATIVE EDUCATION

3 Credits
The student will work at a job site that is specifically

related to his/her career objectives. The course will be a field project within the framework of actual work experience in accounting.

ACC 299—ACCOUNTING PRACTITIONERS' REVIEW SEMINAR

3 Credits
Prepares individual candidates for the Indiana State Board for Accountancy Accounting Practitioner's Examination. Currently, this examination consists of the practice sections of the Uniform Certified Public Accountant (C.P.A.) Examination, which is given on the first Wednesday and Thursday afternoons in May and November. Because of the broad subject area covered and the constant revision of areas tested, as well as the difficulty of the examination, the emphasis of this course is to prepare the candidate to have a solid understanding of the central concepts of accounting and the ability to apply these concepts in unusual situations.

COMPUTER PROGRAMMING TECHNOLOGY

The two-year Computer Programming Technology program leads to an Associate in Applied Science Degree. It provides the student with a minimum of five (5) programming courses in two (2) languages and information in the areas of data processing techniques, computer operations, job control language and operating systems, systems analysis and design, business programming application, data communications and problem solving techniques. Additionally, the program offers instruction in effective written, oral, and interpersonal communications.

The curriculum provides an integrated study of the theory and practice of data processing for business, industry, and other applications. Laboratory activities using a variety of equipment emphasize programming and software applications and hands-on experience. The practical hands-on teaching/learning approach develops the skills needed in the workplace.

The program is directed toward preparing the computer information systems technician most commonly sought by businesses. It also provides resources for those individuals who wish to pursue selected courses only, in conjunction with another program of study or for the purpose of job upgrading.

The Associate in Applied Science degree program requires 64 credits for completion. Technical Certificates are also available in specialized areas. An Associate in Science degree program is offered in Evansville, enabling a student to transfer to the University of Southern Indiana. Programs are offered in Gary, Hammond, Valparaiso, South Bend, Warsaw, Fort Wayne, Lafayette, Kokomo, Logansport, Anderson, Muncie, Terre Haute, Indianapolis, Connersville, Richmond, Bloomington, Columbus, Madison, Evansville and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (33 Credits)

Prefix	No.	Title	Semester Credits
CPT	101	Data Processing Fundamentals	3
CPT	102	Introduction to COBOL Programming	3
CPT	103	Logic and Documentation	3
CPT	104	Operating Systems	3
CPT	201	Advanced COBOL Programming	3
CPT	202	Data Communications	3
CPT	203	Systems Analysis and Design	3
CPT	204	Systems Development with High-Level Tools	3
ACC	101	Accounting Principles I	3
BUS	101	Introduction to Business	3
INF	101	Introduction to Microcomputers	3

General Education Requirements (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
SOC	101	Human Relations	3
SCI	101	Physical Science	3
MAT	109	Finite Math	3

Regional Electives (16 Credits) 16

Total Credits 64

COMPUTER PROGRAMMING TECHNOLOGY COURSE DESCRIPTIONS

CPT 101—DATA PROCESSING FUNDAMENTALS

3 Credits
Introduction to data processing and programming, with emphasis on hands-on computer experience. Examines the role of data processing in an organization including: data processing applications, computer hardware and software, internal data representation, stored program concepts, systems and programming design, flowcharting, and data communications.

CPT 102—INTRODUCTION TO COBOL PROGRAMMING

3 Credits
An introduction to COBOL (Common Business Oriented Language) with emphasis on developing structured programming skills. Develops proficiency in applying the programming development cycle to elementary business problems.

CPT 103—LOGIC AND DOCUMENTATION

3 Credits
Presents structured techniques for the efficient solution of business related computer programming logic problems. Includes program flowcharting, pseudocoding, and hierarchy charts as a means of solving these problems. Documentation procedures include creating file layouts, print charts, program narratives, user documentation, and system flowcharts for these business problems.

CPT 104—OPERATING SYSTEMS

3 Credits
A study of computer operating systems, purposes, structure and various functions. Covers comprehensive sets of language translators and service programs, operating under supervisory coordination of an integrated control program which form the total operating system of a computer.

CPT 105—PRACTICAL COMPUTER OPERATIONS

3 Credits
Demonstrates workstation and minicomputer operations including peripheral devices. Information is given on entire data processing area including job responsibilities, standards and run manuals, message control functions, documentation and backup procedures.

CPT 106—UNIX V OPERATING SYSTEM

3 Credits
Studies the UNIX V Operating System and its use as a powerful time-sharing operating system. Includes basic UNIX commands, use of the visual editor, the UNIX directory structure and file management with SHELL commands. Offers opportunities to apply skills and knowledge in a laboratory environment.

CPT 107—BASIC PROGRAMMING LANGUAGE

3 Credits
Provides an introduction to the basic concepts of program design and programming using the BASIC programming language. BASIC is the primary language for use with microcomputers. Some topics included are: basic arithmetic operations, accumulating and printing totals, comparing, array processing and interactive programming. This course offers students an opportunity to apply skills in a laboratory environment.

CPT 201—ADVANCED COBOL PROGRAMMING

3 Credits
Continues topics introduced in Introduction to COBOL with more logically complex business problems. Develops a higher level of COBOL proficiency as well as a greater familiarity with debugging techniques and the structured approach through class instruction and laboratory experience.

CPT 202—DATA COMMUNICATIONS

3 Credits
Introduces the concepts of data communications in order to build a foundation of knowledge upon which to add the new technologies as they are developed.

CPT 203—SYSTEMS ANALYSIS AND DESIGN

3 Credits
Provides instruction in creating or modifying a system by gathering details, analyzing the data, designing the system by creating solutions, and implementing and maintaining the system.

CPT 204—SYSTEMS DEVELOPMENT WITH HIGH—LEVEL TOOLS

3 Credits
Analyzes established and evolving methodologies for the development of business-oriented computer infor-

mation systems. Develops competencies in techniques that apply modern software tools to generate applications directly, without requiring detailed and highly technical program writing efforts.

CPT 205—DATABASE DESIGN

3 Credits
Introduces program applications in a database environment with emphasis on loading, modifying, and querying the database by means of a host language (COBOL). Discussed data structures; indexed and direct file organizations; models of data, including hierarchical, network, and relational; storage devices, data administration and analysis; design; and implementation.

CPT 206—COBOL III

3 Credits
Offers advanced study in COBOL programming, including programming with direct access devices and using the COBOL sort feature. Covers structured programming and documentation. Continues study of job control language.

CPT 208—RPG II PROGRAMMING FUNDAMENTALS

3 Credits
Provides a general introduction to the RPG II programming language with emphasis on "hands on" programming experience. This course presents the most important features of the RPG II language—from input/output processing to applications requiring handling. Language concepts are introduced in class lecture and then applied by students in programming lab assignments.

CPT 209—"C" PROGRAMMING

3 Credits
This course provides a basic understanding of the fundamental concepts involved when using a low level development language. The emphasis is on logical program design using a modular approach involving task oriented program functions. The role of data types, storage classes and addressable memory locations is thoroughly discussed. Since C is a language quite unlike anything most students have been exposed to, the philosophy of this course is to provide a sound foundation of fundamental concepts such as the C function and the proper use of pointers.

CPT 210—ASSEMBLER LANGUAGE PROGRAMMING

3 Credits
This course will give the student a very basic understanding of the Assembler process using IBM mainframe computers. This course will stress the importance of byte-wise manipulation of data fields when using low level languages. The emphasis is on the actual workings of a computer during the execution of a computer program. The role of data types, EBCIDIC format of data storage and addressable memory locations is thoroughly discussed. Since Assembler is so vastly different from most languages that students are exposed to, the philosophy of this course is to provide a sound foundation of fundamental concepts associated with the assembler process.

CPT 211—PASCAL PROGRAMMING

3 Credits
This course provides a basic understanding of the structured programming process necessary for successful Pascal programming. The major emphasis is top down program design and modularity, using Pascal procedures, functions and independent subprograms. Simple and advanced data types are discussed as well as program control aids, algorithm development and program debugging. The goal of this course is to provide the student with a fundamental understanding of good programming technique in a basic knowledge of Pascal syntax and structure.

CPT 215—FIELD STUDY

4 Credits
Provides opportunity for a field project or research case study within the Computer Technology field. The project or study will include collection and analysis of data and/or actual work experience in business or industry.

CPT 216—ADVANCED RPG II PROGRAMMING

3 Credits
Offers advanced study in the use of the compiler language RPG II in solving business problems. Attention is given to the various file processing methods and a working knowledge of advanced features and techniques through laboratory experience.

CPT 217—C.I.C.S. COMMAND LEVEL PROGRAMMING

3 Credits
Familiarizes the student with CICS Command Level Programming Language, its organization and use, the principles of data communication, and the incorporation of these principles in CICS. Students will write pseudo-conversational CICS programs, then test and debug these programs.

CPT 218—ADVANCED ASSEMBLER LANGUAGE

3 Credits
Continues those topics introduced in Assembler Lan-

guage Fundamentals with emphasis placed on table handling and disk programming techniques.

CPT 219—ADVANCED C.I.C.S. COMMAND LEVEL PROGRAMMING

3 Credits
Expands the student's knowledge of CICS Command Level Programming Language. Students will write pseudo-conversational CICS programs, then test and debug these programs.

CPT 220—SHELL COMMAND LANGUAGE FOR PROGRAMMERS

3 Credits
This course teaches the student how to write, test and debug Shell procedures on a computer utilizing a UNIX operating system. Topics include: the Shell and how it works, shell processes, variables, keyword and positional parameters, control contructs, special substitutions, pipelines, debugging aids, error/interrupt processing and the shell command line. The course offers students the opportunity to apply skills in a laboratory environment.

CPT 221—ADVANCED C PROGRAMMING

3 Credits
Continues those topics introduced in C Language Programming with emphasis on array processing, file processing and advanced debugging techniques. Students will have the opportunity to apply skills and a laboratory environment.

CPT 281-293—SPECIAL TOPICS IN COMPUTER PROGRAMMING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

CULINARY ARTS TECHNOLOGY

Ivy Tech offers a comprehensive Culinary Arts program which will familiarize students with culinary styles of both outstanding chefs and experienced instructors with food preparation techniques. The program will provide students with numerous opportunities for actual food preparation experiences.

The Culinary Arts program covers food, beverages, menu planning, ethnic food preparation, classical cuisines, and pastries. Special attention is given to center-of-the plate items with emphasis on the presentation of prepared food. It also focuses on nutrition, sanitation, personal hygiene and safety regulations.

A two-year Associate in Applied Science degree is offered. Technical Certificates are also available in specialized areas. Programs are offered in Hammond, Fort Wayne and Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE

Technical Courses (55 Credits)

Prefix	No.	Title	Semester Credits
CUL	101	Basic Foods Theory and Skills	3
CUL	102	Sanitation and First Aid	2
CUL	103	Nutrition	2
CUL	104	Soups, Stocks and Sauces	3
CUL	105	Institutional Food Service	2
CUL	106	Pantry and Breakfast	3
CUL	107	Purchasing Procedures and Controls	2
CUL	108	Baking	4
CUL	109	Meat Cutting	3
CUL	201	Food and Beverage Cost Control	2
CUL	202	Special Cuisines	3
CUL	203	Table Service	3
CUL	204	Classical Pastries	3
CUL	205	Fish and Seafood	3
CUL	206	Externship	3
CUL	207	Catering	4
CUL	208	Garde Manger	3
CUL	209	Menu Design	2
CUL	210	Food Service Supervision	2
CUL	211	Classical Cuisine	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
INF	101	Introduction to Microcomputers	3
ENG	101	English Composition	3
ENG	102	English Composition II	3
ENG	103	Speech	3
HST	115	Applied Behavioral Psychology or	
SOC	101	Human Relations	3
MAT	101	Algebra I or	
MAT	107	Math of Finance	3
		Total Credits	73

CULINARY ARTS TECHNOLOGY COURSE DESCRIPTIONS

CUL 101—BASIC FOODS THEORY AND SKILLS

3 Credits
Fundamentals of food preparation service procedures, sanitation and safety practices in the food service business. Also provides a background and history of the hospitality industry and introduction to hospitality/food service organizations and career opportunities.

CUL 102—SANITATION & FIRST AID

2 Credits
Develops understanding of basic principles of food service sanitation and safety in maintaining a safe and healthy environment for the consumer. Laws and regulations related to safety, fire, and sanitation.

CUL 103—NUTRITION

2 Credits
Examines characteristics, functions, and food sources of the major nutrient groups and how to maximize nutrient retention in food preparation and storage. Nutrient needs throughout the life cycle and related applications of menu planning and food preparation.

CUL 104—SOUPS, STOCKS, AND SAUCES

3 Credits
Introduces the four major stocks, five major sauces, and the soups that are derived from them. Time will be given to help develop the necessary skill development in the fourteen major cooking methods.

CUL 105—INSTITUTIONAL FOOD SERVICE

2 Credits
Introduction to various institutional food service facilities. Includes converting recipes for quantity food production, calculating per portion cost, and determining profitable selling prices.

CUL 106—PANTRY AND BREAKFAST

3 Credits
Techniques and skills needed in breakfast cookery and knowledge of the pantry department. Preparation of eggs, pancakes, waffles, and cereals. Experience in salad prep, salad dressing, hot and cold sandwich prep, garnishes and appetizers.

CUL 107—PURCHASING PROCEDURES & CONTROLS

2 Credits
Development and implementation of an effective purchasing program. Focuses on supplier relations and selection, negotiation, and evaluation. In-depth examination of major purchase categories.

CUL 108—BAKING

4 Credits
Fundamentals of baking science, terminology, ingredients, weights and measures, formula conversion and storage. Preparation of yeast goods, pies, cakes, cookies and quick breads. Use and care of equipment. Sanitation, hygienic work habits and conformance to health regulations are emphasized.

CUL 109—MEAT CUTTING

3 Credits
The study of meat cutting which includes the breakdown of beef, pork, poultry, lamb and veal.

CUL 201—FOOD & BEVERAGE COST CONTROL

2 Credits
Mathematical principles applied to the food service industry. Development of skills in food related tasks.

CUL 202—SPECIAL CUISINES

3 Credits
Introduction to foods from various cultures: historical background and skill development in preparation of these foods. Further study of table service and table-side food preparation is included.

CUL 203—TABLE SERVICE

3 Credits
Practical knowledge of and skills in various types of service in a variety of operations. Relationship between "front" and "back" of the house. Emphasis is on developing the service techniques of the major table service styles.

CUL 204—CLASSICAL PASTRIES

3 Credits
Classic French, Italian and European desserts. Includes the preparation of goods such as puff pastry, specialty cookies, ganache, parlimose creams and fillings, and specialty sauces. Emphasis is on size, consistency, presentation, eye appeal and taste of pastries produced.

CUL 205—FISH AND SEAFOOD

3 Credits
The importance of fish and seafood in today's market. Types and categories of American and imported fish

and shell fish, proper buying, storage, preparation, and merchandising of fish and seafood. Experiences in boning, cutting, and various methods of cooking appropriate to aquatic dishes.

CUL 206—EXTERNSHIP

3 Credits
Offers students practical work experience in chosen areas of specialization. Students will be required to work a minimum of 144 hours in an approved hospitality establishment. Emphasis is on skills at the dishwasher, prep-cook, and station cook.

CUL 207—CATERING

4 Credits
The fundamentals of catering: the business of supplying food, goods, and organized service for public and private functions. Includes staffing, equipment, transportation, contracting, special arrangements, beverage service, and menu planning. Also covers cold food preparation and presentation techniques.

CUL 208—GARDE MANGER

3 Credits
Basic garde manger principles and functions and duties of the garde manger department as they relate to other kitchen operations. Introduction to specialty work: ice carving, artistic centerpieces, and buffet decorations. Proper equipment and garde manger area planning.

CUL 209—MENU DESIGN

2 Credits
Develops skill needed for menu planning in various types of facilities and service. Covers menu layout, selection and development, and pricing structures.

CUL 210—FOOD SERVICE SUPERVISION

2 Credits
Designed to prepare the student for the transition from employee to supervisor. Evaluation of leadership styles and development of effective skills in human relations and personnel management.

CUL 211—CLASSICAL CUISINE

3 Credits
Advance and sophisticated classical culinary methods following the principles and techniques of Escoffier. Includes cooking techniques, timing, presentation, history, and terms pertaining to classical foods and menus, with emphasis on French cuisine. Practical experience in table service operation, kitchen coordination and timing.

CUL 281-293—SPECIAL TOPICS IN CULINARY ARTS TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

DISTRIBUTION MANAGEMENT

Distribution Management is an essential aspect of the manufacturing and marketing of goods, representing "the second largest employer in the United States." Distribution Management includes the five major components of the physical distribution system: material handling, warehousing, inventory control, order processing and customer service, and transportation (road, rail, water and air carriers).

Career opportunities are found with shippers, carriers and receivers. Entry level positions could include assisting a line supervisor of one of the major physical distribution and logistics areas or assisting in a staff capacity in the coordination of several of their business activities. Advancement opportunities could include management of one or more of the PD/L systems.

The program is offered in Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (30 Credits)

Prefix	No.	Title	Semester Credits
DSM	101	Distribution and Logistics	3
DSM	201	Transportation Systems	3
DSM	202	Warehousing	3
DSM	204	Case Studies	3
ACC	108	Career Essentials of Accounting.	3
BUS	101	Introduction to Business	3
BUS	102	Business Law	3
BUS	201	Principles of Management	3
INF	101	Introduction to Microcomputers	3
INF	206	Integrated Business Software	3

General Education Courses (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
ENG	103	Speech	3
MAT	107	Math of Finance	3
SOC	101	Human Relations	3

Regional Electives (15 Credits) 15

Total Credits 60

DISTRIBUTION MANAGEMENT COURSE DESCRIPTIONS

DSM 101—DISTRIBUTION AND LOGISTICS

3 Credits
The foundation course for the study of the physical distribution of materials. Reviews basic physical distribution and logistics systems related to warehousing, materials handling, inventory control, order processing, and transportation.

DSM 102—MANUFACTURING

3 Credits
Introductory manufacturing course. Focuses on basic principles, practices, and functions of manufacturing management. Includes applications in the service industries, such as utilities, hospitals, and government.

DSM 103—MARKETING

3 Credits
Introductory marketing course. Focus is on basic marketing strategy for targeting markets and developing a marketing mix of product, price, distribution and promotion.

DSM 201—TRANSPORTATION SYSTEMS

3 Credits
Traffic and transportation management applied to rate negotiation, routing, risk and claims, expediting and tracing. Distinguishes between types of transportation operations, including rail, motor, water, air, and pipelines.

DSM 202—WAREHOUSING

3 Credits
Examines the warehousing function and management system controls. Differentiates between the various inventory control systems. Reviews material handling methods for the preparation, placing, and positioning of materials to facilitate movement or storage. Focus is on computer utilization in warehousing and inventory control management.

DSM 203—SALES SERVICE

3 Credits
Designed to develop the art of selling. Sales knowledge and sales skills are applied to choices of products. Selling principles and the order processing cycle are emphasized.

DSM 204—CASE STUDIES

3 Credits
Designed to apply, by the case study method, the knowledge, principles and skills acquired in students' program concentration (eg., small business, manufacturing, marketing, physical distribution). Seminar for individualized case analysis, presentation, discussion, and solution.

DSM 281-293—SPECIAL TOPICS IN DISTRIBUTION MANAGEMENT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

HOTEL/MOTEL MANAGEMENT

The hospitality industry is the third largest in the nation and, in Indiana, it ranks as the second largest. Ivy Tech's curriculum, with guidance from the American Hotel and Motel Association, has recognized this trend and has made a commitment to meet the present and projected needs of the hospitality industry. The courses are shaped by input from hotel and restaurant management experts and prospective employers. These constant reviews of industrial changes have indicated that hands-on training is in great demand and Ivy Tech has structured its offerings to reflect those changes.

Ivy Tech endeavors to assist employers and employees to keep abreast of changes in the industry. Education in courses ranging from management and marketing to food and beverage purchasing form a solid base of theoretical and practical knowledge. To keep the hospitality industry running smoothly, industry needs a wide variety of experienced personnel.

A two-year Associate in Applied Science degree requires 65 credits for completion. A Technical Certificate is also available. The program is available in Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (47 Credits)

Prefix	No.	Title	Semester Credits
HMM	101	Hospitality Organization and Administration	3
HMM	102	Sanitation and First Aid	3
HMM	103	Purchasing Procedures and Controls	2
HMM	104	Hospitality Law and Security	3
HMM	105	Hospitality Computer Systems	3
HMM	106	Food Production Principles	3
HMM	107	Organization and Human Resource Development	3
HMM	201	Layout and Design	3
HMM	202	Hospitality Marketing and Sales	3
HMM	203	Practicum	3
HMM	204	Food and Beverage Management	3
HMM	205	Front Office	3
HMM	206	Housekeeping	3
HMM	207	Food and Beverage Cost Controls	3
CUL	203	Table Service	3
ACC	101	Accounting Principles I	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
HST	115	Applied Behavioral Psychology	3
MAT	101	Algebra I	3
ENG	102	English Composition II	3
SOC	104	Introduction to Sociology	3
		Total Semester Credits	65

HOTEL/MOTEL MANAGEMENT COURSE DESCRIPTIONS

HMM 101—HOSPITALITY ORGANIZATION AND ADMINISTRATION

3 Credits
Analyzes management functions and responsibilities in administration, organization, communications, accounting, marketing, and human relations.

HMM 102—SANITATION AND FIRST AID

3 Credits
Instruction in how to effectively manage sanitation to achieve high standards that will cause customers to return.

HMM 103—PURCHASING PROCEDURES AND CONTROLS

2 Credits
Methods in the development and implementation of an effective purchasing program. Focuses on issues pertaining to supplier relations and selection, negotiation, and evaluation. Includes in-depth consideration of major categories of purchases.

HMM 104—HOSPITALITY LAW AND SECURITY

3 Credits
Provides awareness of the rights and responsibilities that the law grants to, or imposes upon a hotelkeeper, and illustrates the possible consequences of failure to satisfy legal obligations. Also examines the wide variety of security procedures and systems for guest protection and internal security for asset protection.

HMM 105—HOSPITALITY COMPUTER SYSTEMS

3 Credits
An overview of the information needs of lodging properties and food service establishment. Addresses essential aspects of computer systems, such as hardware, software, and generic applications. Focuses on computer-based property management systems for both front and back office functions and on computer-based restaurant management systems for both service-oriented and management-oriented functions.

HMM 106—FOOD PRODUCTION PRINCIPLES

3 Credits
Techniques and procedures of quality and quantity food production. Based upon principles of selection, composition, and preparation of the major food products. Includes an extensive set of basic and complex recipes for practice purposes.

HMM 107—ORGANIZATION & HUMAN RESOURCE DEVELOPMENT

3 Credits
The assessment and analysis of training and non-training needs of organizations and personnel within the context of the basic evolution of a company. Also covers the systematic design of instruction, evaluation of training programs, and management of the training functions. Prepares an individual for the transaction from employee to supervisor.

HMM 201—LAYOUT AND DESIGN

3 Credits
Principles of selection, operation, and maintenance of equipment for hotels and restaurants. Covers materials, structural details, design, cost, performance and specifications.

HMM 202—HOSPITALITY MARKETING AND SALES

3 Credits
Designed to provide students with basic knowledge and practical experience that will enable them to develop strategic marketing plans for various hotel properties.

HMM 203—PRACTICUM

3 Credits
Provides students with practical work experience in chosen areas of specialization. Students are required to work a minimum of 144 hours under managers of selected hospitality establishments.

HMM 204—FOOD AND BEVERAGE MANAGEMENT

3 Credits
Provides a basic understanding of the principles of food production and service management, reviewing sanitation, menu planning, purchasing, storage, and beverage management.

HMM 205—FRONT OFFICE

3 Credits
A systematic approach to front office procedures, detailing the flow of business through a hotel, beginning with the reservation process and ending with billing and collection procedures within the context of the overall operation of a hotel. Examines front office management, the process of handling complaints, and concerns regarding hotel safety and security.

HMM 206—HOUSEKEEPING

3 Credits
Provides an overview of the fundamentals of housekeeping management. Describes the management functions, tools, and practices required in modern lodging and institutional housekeeping departments.

HMM 207—FOOD & BEVERAGE CONTROLS

3 Credits
Covers principles and procedures in an effective food and beverage control system, including standards determination, the operating budget, income and cost control, menu pricing, and computer applications.

HMM 208—HOUSEKEEPING TECHNIQUES

3 Credits
The basic tools required in institutional housekeeping. Instruction in accepted cleaning techniques.

HMM 209—APARTMENT MANAGEMENT

3 Credits
Examines the responsibilities of landlords and tenants in apartments, townhouses, condominiums, and other permanent rental properties. Includes study of small and large complexes, business and maintenance details, and roles of personnel in each setting.

HMM 210—HOTEL SUPERVISION

3 Credits
Offers case problems in hospitality management. Students are expected to assess realistic situations that confront modern hospitality executives.

HMM 211—FINANCIAL MANAGEMENT

3 Credits
Special applications of accounting principles to the hospitality industry. Includes business principles pertaining to food and lodging, methods of recordkeeping for creditors, owners, and government, and payroll control. Emphasis is on tax laws specific to the industry, expense control, and techniques of profitable management.

HMM 212—INSTITUTIONAL MANAGEMENT

3 Credits
Management problems unique to institutions, including boarding schools, professional sports training camps, summer camps, hospitals, nursing homes, prisons, and facilities for retirement, mental health, and extended care. Develops awareness of basic common needs throughout the hospitality industry. Guest lectures and field trips to institutions highlight the study.

HMM 213—PROPERTY MANAGEMENT

3 Credits
Covers all phases of property management including first impression, staffing, training, capital investments, cost analysis, rentals, and renovation.

HMM 214—TOURISM

3 Credits
Provides comprehensive study of tourism principles, practices, and philosophies. Offers practical education in the business of tourism.

HMM 215—HOTEL—MOTEL SEMINAR

3 Credits
Offers opportunities by means of guest lectures and group discussion to explore particular problems or topics of current interest.

HMM 216—BASIC COOKING I

3 Credits
Lectures and demonstrations in the fourteen basic forms of food preparation.

HMM 217—FISH AND SEAFOOD

3 Credits
Preparing hot and cold fish, crustaceans, shellfish, and mollusks. Includes baking, poaching, braising, sauteing, deep fat frying, broiling, grilling, and gratin methods.

HMM 218—MEAT PREPARATION

3 Credits
Basic methods of preparation for beef, veal, pork, lamb, poultry and game. Includes sauteing, broiling, grilling, stewing, simmering, poaching, boiling, and braising methods.

HMM 219—MEAT I

3 Credits
Focuses on meat identification as established by the National Association of Meat Purveyors. Demonstrates the cutting of carcasses into primal cuts and the breakdown of beef, lamb and pork.

HMM 220—NATIONAL DISHES

3 Credits
Application of basic cooking methods and forms of preparing national dishes. Features the preparation of Swiss, French, German, English and American, Italian, Austrian, and other fine cuisine.

HMM 221—BASIC COOKING II

3 Credits
Skill development in the preparation of bases, stocks, sauces, and soups.

HMM 223—BUFFET CATERING

3 Credits
Advanced instruction in cold food preparation and presentation techniques: charcuterie, specialty canapes, hors d'oeuvres, appetizers, pates, galantines, chaudfroids, terrines, tallow and ice carving, aspics, mousses, cold sauces, vegetable carving, and food decoration. Covers food materials' utilization, buffet planning, layout, equipment, zoning, and services. Provides a practical approach to decorating platters for industrial and classical buffets. Students plan, prepare, present and serve a cold buffet.

HMM 224—BLOWN AND PULLED SUGAR

3 Credits
Basic course for learning the fundamental techniques of sugar work which prepares culinarians to blow and pull sugar to create unique table decorations.

HMM 225—SERVER TRAINING

3 Credits
A seminar class for training professional waiters and waitresses in proper serving techniques. Special emphasis is placed on human relations and communication skills.

HMM 281-293—SPECIAL TOPICS IN HOTEL/ MOTEL MANAGEMENT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

INDUSTRIAL SUPERVISION TECHNOLOGY

The Industrial Supervision program provides formal training in supervising techniques and principles. Students learn how to set goals, plan, organize, staff, direct, motivate, and control operations in an industrial setting. These skills are applied to supervision, quality control, production control, safety, and methods improvement. Emphasis is placed on team building and employee in-service training. The program prepares students for entry-level supervisory positions in manufacturing, the service industry, and government agencies.

A two-year program, requiring 60 credits, leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. Programs are offered in Anderson, Evansville, Fort Wayne, Gary, Indianapolis, Lafayette, Marion, Muncie, South Bend, and Warsaw.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (30 Credits)

Prefix	No.	Title	Semester Credits
IST	101	Quality Control Concepts and Techniques I	3
IST	102	Techniques of Supervision I	3
IST	103	Industrial Safety I	3
IST	104	Techniques of Supervision II	3
BUS	102	Business Law	3
ACC	101	Accounting Principles I	3
INF	101	Introduction to Microcomputers	3
IST	201	Personnel Management and Training	3
IST	202	Production Planning and Control	3
IST	211	Labor Relations	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I	3
MAT	108	Statistics	3
SOC	101	Human Relations	3
SOC	106	Principles of Macroeconomics	3

Regional Electives (12 Credits) 12

Total Credits 60

INDUSTRIAL SUPERVISION TECHNOLOGY COURSE DESCRIPTIONS

IST 101—QUALITY CONTROL CONCEPTS AND TECHNIQUES I

3 Credits
Covers current quality control concepts and techniques in industry, with emphasis on modern manufacturing requirements.

IST 102—TECHNIQUES OF SUPERVISION I

3 Credits
Introduces basic employee development with emphasis on the responsibilities of a newly appointed supervisor. Special attention is given to organizational structure, motivation, delegation of authority, interviews, orien-

tation and induction of new employees, employee performance evaluations, and dealing with employee conflict.

IST 103—INDUSTRIAL SAFETY I

3 Credits
Covers the day-to-day responsibilities of management and supervision toward attaining an accident-free organization. Emphasizes first aid, fire prevention and control, safety procedures in starting and stopping machines, accident investigations, and other preventive measures. Also covers methods of advertising good safety practices, rules of plant protection in relation to safety and OSHA.

IST 104—TECHNIQUES OF SUPERVISION II

3 Credits
Further develops skills for effective supervision of employees by utilizing analysis of cases, group discussion, in-basket exercises, and role-playing. Includes problem-solving techniques, labor relations, legal guidelines, policy making, counseling troubled employees, effective communications, and human relations skills.

IST 105—BUSINESS MANAGEMENT/ MANUFACTURING

3 Credits
Introductory manufacturing course. Focuses on basic principles, practices, and functions of manufacturing management. Includes applications in the service industries, such as utilities, hospitals, and government.

IST 106—SURVEY OF POSTAL SYSTEM

3 Credits
Survey of the major components and subdivisions of the postal service system. Traces the delivery of written communication and merchandise, postal philosophies, policies, procedures, rules and regulations from earlier eras to the present.

IST 201—PERSONNEL MANAGEMENT AND TRAINING

3 Credits
Manpower planning, employee recruitment, selection and placement, promotions, transfers,separations, and wage and salary administration. Emphasizes employee training as an organizational resource. Demonstrates development and implementation of effective training programs. Attention is given to the nature of learning, concept teaching, the creation of a motivating learning atmosphere, use of audiovisual aids, planned versus spontaneous learning, rote teaching, mnemonic devices, learning curves, and learning as problem solving.

IST 202—PRODUCTION PLANNING AND CONTROL

3 Credits
Production planning concepts and inventory control techniques and applications. Areas of concentration include the production function, design and development of products/services, location and layout, forecasting and scheduling, materials purchasing and inventory management, and quality control.

IST 203—RELIABILITY OBJECTIVES

3 Credits
Introduces development and principles of reliability engineering. Establishes mathematical and physical bases of reliability and applies basic elements of reliability data analysis. Surveys concepts basic to modern reliability requirements, with emphasis on practical applications in manufacturing processes and production operations.

IST 204—MECHANICAL METROLOGY

3 Credits
Provides instruction and laboratory experiments in the use of mechanical testing and measurement equipment for quality control.

IST 205—TECHNIQUES OF LEADERSHIP

3 Credits
With the aid of personality testing, the student learns about various approaches to effective leadership and discovers an appropriate personal leadership style. Specific qualities and skills needed for conference leadership (organizing, facilitating, controlling, summarizing, speaking, and problem defining and solving) are also explored.

IST 206—TIME AND MOTION STUDY

3 Credits
Examines industrial applications of time and motion studies in establishing rates.

IST 207—MANUFACTURING COSTS AND VALUE ANALYSIS

3 Credits
Applies recognized techniques and tests to measure value and eliminate unnecessary costs in design, development and manufacturing without affecting quality; differs from cost control in that it is directed toward analyzing value, not cost.

IST 208—MATERIALS HANDLING

3 Credits
Applied stresses and quality controls pertaining to the handling and storing of industrial materials. Attention is

given to shelf life of materials, weight and mass configuration, and specifications of vendors materials.

IST 209—PLANT LAYOUT AND PROCESS PLANNING

3 Credits
Principles and practices of factory planning, including layout fundamentals, layouts for small and medium sized plants, and selection of equipment for the production and handling of materials. Also covers tooling determination and operational time, setup, and sequence. Emphasizes efficiency in the arrangement of work areas for reduction of costs.

IST 210—CASE PROBLEMS IN MANAGEMENT

3 Credits
Application of quantitative and qualitative skills to case study problems in management. Solutions demand planning, leadership, and financial analysis.

IST 211—LABOR RELATIONS

3 Credits
Examines labor laws and practices pertaining to industrial relations. Covers development and application of laws, mediation conciliation, collective bargaining, arbitration, and handling of grievances.

IST 212—MANUFACTURING ORGANIZATION I

3 Credits
The organization of a typical manufacturing operation, with attention to functional components and their interrelationships. Reviews organizational principles as they apply to the operation, and examines the duties and responsibilities of the first-line supervisor. Develops the basic tools of managerial decision-making and applies them to typical case problems.

IST 213—MANUFACTURING ORGANIZATION II

3 Credits
Quality control, research and development, marketing, production, inventory control, personnel, and maintenance functions. Involves forms of ownership, analysis of financial data, capital investment, and budgeting.

IST 214—INDUSTRIAL SAFETY II

3 Credits
Establishes procedures following an accident. Covers the preparation and maintenance of accident records, severity rates, workmen's compensation and insurance claims. How effective safety programs are managed in compliance with the law and contractual agreements.

IST 215—PURCHASING AND INVENTORY CONTROL

3 Credits
A practical approach to procurement of materials with regard to price, quality, quantity, and delivery; as well as the purchasing department's place in the organizational structure. Defines responsibility of the purchasing department and its relationship to other departments. Legal aspects, ethics and standards as they relate to procurement.

IST 216—TRAFFIC AND TRANSPORTATION MANAGEMENT I

3 Credits
Transportation systems, federal regulations, freight classification, rates, tariffs, and claims.

IST 217—TIME MANAGEMENT

3 Credits
Trains supervisors and other personnel in more effective management of the business day. Covers time management strategies and behavior patterns. Exercises in scheduling and allocating time, identifying and handling time wasters, dealing with interruptions, and planning for better use of the working day.

IST 218—STATISTICAL CONCEPTS AND TECHNIQUES

3 Credits
Deals with various topics pertaining to statistical applications of quality control, including frequency distribution, probability theory applications and sampling techniques.

IST 219—CUSTOMER SERVICE

3 Credits
Provides functional knowledge of mail delivery and collection systems and in-depth knowledge of all services provided to postal customers.

IST 220—MAIL PROCESSING

3 Credits
Designed to provide an in-depth view of revenue determination procedures and flow characteristics involved in receipt, processing, and dispatch of all classes of mail.

IST 221—POSTAL PROBLEM ANALYSIS

3 Credits
Postal problems are presented for which the students

must use systems analysis, problem solving grids, and decisions by objectives in arriving at solutions.

IST 222—EMPLOYEE SERVICES

3 Credits
Covers the functions of a personnel unit in relation to the services it provides employees of the Postal Service.

IST 281-293—SPECIAL TOPICS IN INDUSTRIAL SUPERVISION TECHNOLOGY

1-5 Credits
A Special Topics course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concept presented in their program area (Contact Chief Academic Officer for more information).

INFORMATION/DATA MANAGEMENT

Information/Data Management is a user-oriented program with an emphasis on microcomputer applications within a business environment. Demand for employees with computer and business skills is particularly high in small and medium-sized firms which create, transmit, and control information by using computer technology as a management tool.

Business automation systems allow for the integration of several functionally related applications such as word processing, database management, spreadsheet, programming, electronic mail systems, electronic filing, graphics generation, and telecommunications. These systems may be stand-alone, shared logic, distributed, or integrated.

The Associate in Applied Science Degree is awarded upon successful completion of 60 credit hours. Technical Certificates are also available in specialized areas. Students may pursue selected courses only, in conjunction with another program of study, or for career advancement.

The program is offered at Valparaiso, Elkhart, Fort Wayne, South Bend, Kokomo, Anderson, Muncie, Terre Haute, Indianapolis, Richmond, Columbus, Madison, Evansville and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (33 Credits)

Prefix	No.	Title	Semester Credits
INF	102	Microcomputer Operating Systems	3
INF	103	Microcomputer Programming	3
INF	201	Microcomputer Database Management Systems	3
INF	202	Electronic Spreadsheets	3
INF	203	Computer Business Applications	3
CPT	101	Data Processing Fundamentals	3
CPT	103	Logic and Documentation	3
CPT	202	Data Communications	3
CPT	203	Systems Analysis and Design	3
BUS	101	Introduction to Business	3
ACC	101	Accounting Principles I	3

General Education Requirements (18 Credits)

MAT	101	Algebra 1	3
ENG	101	English Composition	3
ENG	102	English Composition II	3
ENG	103	Speech	3
SOC	101	Human Relations	3
INF	101	Introduction to Microcomputers	3

Regional Electives (9 Credits) 9

Total Credits 60

INFORMATION/DATA MANAGEMENT COURSE DESCRIPTIONS

INF 101—INTRODUCTION TO MICROCOMPUTERS

3 Credits
Introduces the physical components and operation of microcomputers. Focuses on computer literacy, and basic concepts of word processing, spreadsheet processing and database processing as examples of common microcomputer applications used in business.

INF 102—MICROCOMPUTER OPERATING SYSTEMS

3 Credits
Introduces the organization, structure, and functions of an operating system for a microcomputer. Presents student with operating system concepts such as: commands, error messages, interrupts, function calls, device drivers, structure, files, and organization, with practical applications.

INF 103—MICROCOMPUTER PROGRAMMING

3 Credits
Introduces a structured microcomputer language. Concepts in input output commands, arithmetic expressions, conditional control, iteration techniques, and subroutines are emphasized. Offers application opportunities for solving business problems.

INF 201—MICROCOMPUTER DATABASE MANAGEMENT SYSTEMS

3 Credits
Presents an overview of relational, hierarchical and network database models with emphasis on microcomputer relational database management systems (DBMS). Using database software, students have hands-on experience creating, modifying, retrieving and reporting from databases. Students also develop business applications using the database language.

INF 202—ELECTRONIC SPREADSHEETS

3 Credits
Presents an in-depth study of an electronic spreadsheet. Focuses on business applications using menu commands, formulas, functions, macro commands, graphs, printing, database, and file operations.

INF 203—COMPUTER BUSINESS APPLICATIONS

3 Credits
Advanced course in which the students apply business skills, microcomputer skills, and communication skills within business applications. Emphasis is placed on application of several forms of computerized information processing including data processing, word processing, Spreadsheets, graphics, and communications. Students will also analyze the effects of automation on the office worker, management, and the work environment and prepare written and oral presentations.

INF 204—OFFICE AUTOMATION

3 Credits
Presents a perspective on the needs, potentials, and urgencies of systems to support modern office functions. Concentration is on structured analysis and design of hardware/software systems for creating, maintaining, printing, and communicating data files utilizing text processing systems. Methodologies for creating procedures to produce letters and reports from data files are covered. Concepts and techniques will be incorporated into practical applications.

INF 206—INTEGRATED BUSINESS SOFTWARE

3 Credits
Presents knowledge of integrated microcomputer software concepts. Students will design a complete business system utilizing all parts of an integrated microcomputer software package which can share the same data, manipulating it in different ways. Projects will include usage of word processing, electronic spreadsheets, graphics, databases, and command language.

INF 210—HARDWARE AND SOFTWARE TROUBLESHOOTING

3 Credits
Presents an in-depth analysis of the components of a computer system and their relationship to each other. Includes concepts of parallel and serial connectivity, installation and maintenance of software, peripheral devices, interface cards, and device drivers. The student will analyze realistic hardware/software problems encountered in the workplace and learn techniques and procedures to implement solutions.

INF 211—ADVANCED DATABASE MANAGEMENT SYSTEMS

3 Credits
A continuation of INF 201 Microcomputer Database Management Systems. Emphasis is on the development of advanced applications in database management.

INF 212—ADVANCED ELECTRONIC SPREADSHEETS

3 Credits
A continuation of INF 202 Electronic Spreadsheets. Emphasis is on the advanced application of electronic spreadsheets.

INF 214—TOPICS IN INFORMATION MANAGEMENT

3 Credits
Discusses topics of current interest in information management. Attention is given to special interest projects. Field trips, guest speakers, audio-visual activities, and seminars may be utilized. (Program Advisor approval required)

INF 220—COOPERATIVE EDUCATION

1-9 Credits
This course is designed to give students the opportunity to apply concepts learned in the classroom to actual work situations. College credit is earned by satisfying both academic standards of the College and the work performance standards of the employer. (Program Advisor approval required)

INF 230—SEMINAR

1 Credit
Discuss topics of current interest in computerized information management with an emphasis on the application of information management skills during lab time. Various seminar topics may be identified and offered each term under this course number.

INF 231—SEMINAR

2 Credits
Discusses topics of current interest in computerized information management with an emphasis on the application of information management skills during lab time. Various seminar topics may be identified and offered each term under this course number.

INF 232—SEMINAR

3 Credits
Discusses topics of current interest in computerized information management with an emphasis on the application of information management skills during lab time. Various seminar topics may be identified and offered each term under this course number.

INF 281-293—SPECIAL TOPICS IN INFORMATION/ DATA MANAGEMENT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

MARKETING TECHNOLOGY

The Marketing Technology program offers extensive business training to prepare the student for employment opportunities in marketing operations and management. Courses include marketing, management, sales techniques, retailing, advertising, accounting, mathamatics and communications.

Career opportunities may be found in management, advertising, distribution, professional sales, retailing, wholesaling, and merchandising, for employment in profit as well as in nonprofit organizations.

A two-year program, requiring 60 credits, leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. The program is offered in Anderson, Evansville, Fort Wayne, Gary, Indianapolis, Kokomo, Lafayette, Muncie, Terre Haute, and Valparaiso.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (33 Credits)

Prefix	No.	Title	Semester Credits
BUS	101	Introduction to Business	3
MKT	101	Principles of Marketing	3
MKT	102	Principles of Selling	3
MKT	103	Principles of Retailing	3
MKT	104	Advertising	3
MKT	201	Introduction to Market Research	3
MKT	202	Logistics/Purchasing Control	3
MKT	204	Marketing Management	3
ACC	101	Accounting Principles I	3
BUS	201	Principles of Management	3
BUS	208	Organizational Behavior	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
SOC	107	Principles of Microeconomics	3
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I	3
INF	101	Introduction to Microcomputers	3
MAT	107	Math of Finance	3

Regional Electives (9 Credits) 9

Total Credits 60

MARKETING TECHNOLOGY COURSE DESCRIPTIONS

MKT 101—PRINCIPLES OF MARKETING

3 Credits
Introduces the marketing role in society and how it affects the marketing strategy, with emphasis on the marketing mix, product planning, and the effects of the demographic dimension on the consumer market.

MKT 102—PRINCIPLES OF SELLING

3 Credits
Provides an overview of selling and the selling process. Includes the psychology of selling and develops selling skills through a series of selling situations.

MKT 103—PRINCIPLES OF RETAILING

3 Credits
Studies retailing concepts and practices, including retail merchandise planning, buying, pricing, promotion, and control in established retail operations. Attention is given to managerial and operational skills.

MKT 104—ADVERTISING

3 Credits
Focuses on advertising as the key element in the promotion of goods and services in the marketplace. Attention in given to advertising media and media selection, advertising copy strategy, advertising regulations and organizations of advertising functions.

MKT 201—INTRODUCTION TO MARKET RESEARCH

3 Credits
Applies basic research methods entailing procedures, questionnaire design, data analysis, and effectively communicating research results.

MKT 202—LOGISTICS/PURCHASING CONTROL

3 Credits
This course introduces the student to the framework of logistics, the logistics environment, customer services and materials management. Subjects of current interest, to include material resources planning (MRP) and just-in-time (JIT) principles, are also introduced.

MKT 204—MARKETING MANAGEMENT

3 Credits
Focuses on the analysis, implementation, and control of marketing strategy. Emphasis is placed on the major decisions managment faces in its effort to harmonize the objectives and resources of the organization with the needs and opportunities of the marketplace.

MKT 205—PRINCIPLES OF INSURANCE

3 Credits
Introduces the risks faced by business firms and how they might be handled, to include property, liability and personal losses, with attention to insurance contracts and their uses of life, health and pension insurance, as well as public policy including government regulations, and social insurance.

MKT 206—SALES MANAGEMENT

3 Credits
Studies the role of the sales manager emphasizing the leadership function. Attention is given to building a sales team, judging sales performance, territorial management, techniques of sales recruiting and interviewing, training and development, and management of the field sales office.

MKT 207—PUBLIC RELATIONS

3 Credits
This course provides a broad coverage of the public relations field and is designed to acquaint students with the role of effective internal and external public relations in business and industry. It will examine the goals and benefits of public relations, the tools of the public relations practitioner, and the principles and trends of the field.

MKT 208—DISTRIBUTION CENTER MANAGEMENT

3 Credits
The introduction and study of warehousing from both a depositor and operator viewpoint. Topics will include the study of warehousing functions, location and specific site criteria, labor productivity, cost controls, equipment and packaging, and customer service.

MKT 209—EXPORT/IMPORT I

3 Credits
Studies the practical application of export and import techniques and concepts, government regulations, documentation, and financial and transportation considerations of the movement of commerce from and to the United States.

MKT 210—EXPORT/IMPORT II

3 Credits
This course is designed to familiarize the student with import practices, governmental regulations and carrier rate making practices. Students will complete practical

exercises, solve importing problems and work with the tariff schedule of the United States.

MKT 219—FIELD STUDY/COOPERATIVE EDUCATION

4 Credits
The student will work at a job site that is specifically related to his/her career objectives. The course is designed to give students on-the-job experience while receiving college credits toward an associate degree.

MKT 281-293—SPECIAL TOPICS IN MARKETING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

PARALEGAL TECHNOLOGY

The demand for trained paralegals is increasing and the number of job opportunities is projected to increase significantly by the mid 1990s, according to employment analysts. Ivy Tech recognizes this demand and has shaped a curriculum with input from attorneys and professionals associated with the legal field. These advisors offer Ivy Tech the opportunity to establish the qualifications necessary for success in the paralegal field. Ivy Tech's courses meet these qualifications, providing trained, knowledgeable paralegal professionals.

The duties of trained specialists can range from assisting in complicated legal research to managing the scheduling of court appearances. The educational training provides a wide variety of job opportunities and mobility. Classroom lectures in such areas as civil law, real estate, research and writing, wills and trusts, combined with on-the-job training, prepare students for an exciting job as a paralegal.

The program, requiring 75 credits for completion, is offered in Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (51 Credits)

Prefix	No.	Title	Semester Credits
LEG	101	Office Management and Ethics	3
LEG	102	Research and Writing	4
LEG	103	Civil Procedure	3
LEG	104	Torts	3
LEG	105	Business Associations	3
LEG	106	Claims Investigation	3
LEG	107	Contracts and Commercial Law	3
LEG	108	Property Law	3
LEG	109	Family Law	3
LEG	110	Wills, Trusts and Probate	3
LEG	111	Criminal Law and Procedure	3
LEG	112	Bankruptcy Law	3
LEG	201	Appellate Procedure	2
LEG	202	Litigation	3
LEG	203	Computers in the Law Office	3
ACC	108	Career Essentials of Accounting	3
INF	206	Integrated Business Software	3

General Education Courses (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
SOC	101	Human Relations	3
MAT	107	Math of Finance	3
INF	101	Introduction to Microcomputers	3
SCI	XXX	Life and Physical Science Elective	3

Regional Electives (6 Credits) 6

Electives must include a minimum of 6 credits in non-technology specific areas.

Total Credits 75

PARALEGAL TECHNOLOGY COURSE DESCRIPTIONS

LEG 101—OFFICE MANAGEMENT AND ETHICS

3 Credits
Instruction on automated and manual docket and conflict control systems, file organization, closed file control systems, file organization, closed file control research segregation, client funds handling and management principles. Emphasizes internal communication skills and compliance with the Rules of Professional Conduct.

LEG 102—RESEARCH AND WRITING

4 Credits
The study and use of legal research tools such as digests, loose leaf services, reporters, statutory compilations and forms books. Legal writing format and methodology are presented through practical application in drafting memoranda and correspondence. Shepardizing and proper case citation skills are emphasized.

LEG 103—CIVIL PROCEDURES

3 Credits
A study of the Indiana Trial Rules and miscellaneous local rules. Filing requirements, computation of time and form drafting are emphasized.

LEG 104—TORTS

3 Credits
Torts includes a survey of the law of comparative negligence, products liability, defamation, false arrest and other civil wrongs, including knowledge of the elements of such causes of action.

LEG 105—BUSINESS ASSOCIATIONS

3 Credits
The study of various business structures and the rights, duties, liabilities and formalities attendant to such structures. A survey of partnership, agency and corporation law is included.

LEG 106—CLAIMS INVESTIGATION

3 Credits
The study of witness interview techniques, preservation of evidence, organizational skills and alternative methods of gathering facts. Professional client intake and client communication skills are emphasized.

LEG 107—CONTRACTS AND COMMERCIAL LAW

3 Credits
A survey of contract law and the Uniform Commercial Code. Special statutes regarding state unfair trade practices, consumer deception and consumer rights are also presented.

LEG 108—PROPERTY LAW

3 Credits
A survey of the law of real and personal property. Provides practical exposure to title searches, loan documentation, zoning requirements, financing statements, leases and deeds.

LEG 109—FAMILY LAW

3 Credits
A survey of the law of dissolution, custody, child support and visitation, marriage and adoption. Financial declaration forms, client intake, Child Support Guidelines and available social services are presented as practical information.

LEG 110—WILLS, TRUSTS, AND PROBATE

3 Credits
Survey of the law of estates, wills, probate and guardianship, as well as intestate succession. Preparation of probate and administration forms, asset inventories and valuations, certain tax forms and accountings are included.

LEG 111—CRIMINAL LAW AND PROCEDURES

3 Credits
Survey of Indiana criminal statutes and selected federal criminal laws. Investigative and administrative skills are emphasized.

LEG 112—BANKRUPTCY LAW

3 Credits
Bankruptcy Law includes a survey of the Federal Bankruptcy Act. Emphasizes skills needed to accumulate personal financial information, compile initial schedules, collect and organize data for first meeting of creditors, complete proofs of claim and pursue of creditor's rights.

LEG 201—APPELLATE PROCEDURE

2 Credits
In-depth study of the Indiana Rules of Appellate Procedure, with concentration on the mechanical aspects of preparation and filing of the record on appeal and the format required for briefs submitted.

LEG 202—LITIGATION

3 Credits
Litigation includes the study of the Indiana Rules pertaining to actual trial. The discovery process and its tools are reviewed. Skills such as document organization and retrieval, witness statementizing, deposition

summarizing, indexing and scheduling are presented. The Federal Rules of Evidence are surveyed. Trial notebook preparation is surveyed.

LEG 203—COMPUTERS IN THE LAW OFFICE

3 Credits
A survey of software support available to the law practitioner such as litigation support and estate planning support. Also includes instruction on availability and use of research databases such as Dialog, Nexis, Lexis and Westlaw.

LEG 281-293—SPECIAL TOPICS IN PARALEGAL TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

SECRETARIAL SCIENCES

The Secretarial Sciences program prepares students for an office environment which is becoming automated and will approach the electronic office predicted for the future. Students develop not only the basic, traditional office skills, but also skills using technology such as computer hardware, software, and other electronic equipment.

The Secretarial Sciences program is designed to accommodate students with different levels of training and experiences. Courses are offered which provide initial, advanced, and refresher education and which assist individuals in achieving professional recognition and career progression. The Associate in Applied Science degree program prepares graduates as administrative office workers and provides opportunities for specialized training in such areas as legal secretarial, medical secretarial, office management, stenography, and information/word processing. Students who complete the recommended sequence of courses are eligible to take the Administrative/Information Processing Specialist (AIPS) or the Certified Professional Secretary (CPS) exam administered by the Institute for Certifying Secretaries of the Professional Secretaries International Association (PSI). Technical Certificates are also available in specialized areas.

Programs are offered in Anderson, Bloomington, Columbus, Connersville, Elkhart, Evansville, Fort Wayne, Gary, Hammond, Indianapolis, Kokomo, Lafayette, Lawrenceburg, Logansport, Madison, Marion, Muncie, Richmond, Sellersburg, South Bend, Tell City, Terre Haute, Valparaiso, and Warsaw.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (33 Credits)

Prefix	No.	Title	Semester Credits
SEC	101	Basic Formatting	3
SEC	102	Document Management	3
SEC	103	Information/Word Processing Concepts	3
SEC	104	Document Production	3
SEC	201	Specialized Formatting/Transcription	3
SEC	202	Information/Word Processing Applications	3
SEC	203	Principles of Office Management	3
SEC	204	Administrative Office Procedures	3
SEC	205	Business English for Information Processing	3
ACC	101	Accounting Principles I	3
INF	101	Introduction to Microcomputers	3

General Education Requirements (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
MAT	107	Math of Finance	3
SOC	XXX	Social Sciences	6

Regional Electives (17 Credits) 17

Total Credits 65

SECRETARIAL SCIENCES COURSE DESCRIPTIONS

SEC 100—KEYBOARDING

3 Credits
An introduction to keyboarding. Emphasis is on mastery of the keyboard and developing basic keyboarding skills.

SEC 101—BASIC FORMATTING

3 Credits
This course develops keyboarding competencies. Emphasis is placed on increasing keyboarding speed, improving accuracy, developing formatting skills, applying communication skills, and learning document production skills.

SEC 102—DOCUMENT MANAGEMENT

3 Credits
Designed to acquaint students with alphabetic, numeric, geographic, and subject filing procedures. Exposure to the latest equipment, automation and the newer methods of managing, storing and retrieving records. Role of the file worker and place of document management within the overall business enterprise is emphasized.

SEC 103—INFORMATION/WORD PROCESSING CONCEPTS

3 Credits
Introduction to the concept of information/word processing systems. Offers hands-on experience in the operation of word processing systems.

SEC 104—DOCUMENT PRODUCTION

3 Credits
Provides experience producing documents found in business offices. Major focus is on productivity and excellence in document production. Also emphasizes composition skills and the application of communication skills.

SEC 106—REFRESHER SHORTHAND

1 Credit
Designed to bring old, unused shorthand skills to an employable level. Taught in a lab setting emphasizing three areas of skill development: speed, theory, and transcription.

SEC 107—REFRESHER TYPEWRITING

1 Credit
Designed to bring old, unused typing skills to an employable level. Taught in a lab with four areas of skill development: speed and accuracy, business letters, tables and tabulations, and reports.

SEC 108—SHORTHAND/NOTETAKING I

3 Credits
Introductory course emphasizing basic theory, brief forms, and speed in reading from notes and the textbook. Focuses on the correct way to write shorthand. Dictation with emphasis placed on writing and transcription techniques.

SEC 109—PROFESSIONAL DEVELOPMENT

2 Credits
Enables students to analyze and improve themselves in terms of posture, weight control, personal hygiene, grooming, wardrobe, personality, communication, and job application skills for success in employment fields. Designed to foster greater self-esteem and to make a good first impression by being confident, poised, and well groomed. Includes resume and interviewing preparation.

SEC 110—KEYBOARDING SKILL DEVELOPMENT

1 Credit
This course is designed to improve speed and accuracy through drills on the typewriter and/or personal computer.

SEC 111—SHORTHAND/NOTETAKING II

3 Credits
Develops dictation, notereading, and transcription skills through drills and tests. Emphasizes speed, accuracy, and use of correct English. Reinforces and builds on principles and skills learned in Shorthand/Notetaking I.

SEC 112—DATA ENTRY

3 Credits
Prepares for employment in data entry or related data processing positions in an up-to-date computerized business. Basic keyboarding skills and experience with typical applications and a variety of data entry techniques.

SEC 113—OFFICE CALCULATING MACHINES

1 Credit
Designed for the acquisition of competence on the 10-key electronic printing/display calculator. Competence on the desk calculator and familiarity with the types of business problems commonly solved on them are essential elements of the course.

SEC 114—INTRODUCTION TO TYPEWRITING

2 Credits
An introduction to keyboarding and typewriting. Emphasizes keyboard mastery and the ability to type easy copy and perform simple typing exercises. May be taught on the PC, to include basic file manipulation of the Disk Operating System (DOS).

SEC 115—INTRODUCTION TO MICROCOMPUTER KEYBOARDING

2 Credits
A course for beginners in keyboarding on the microcomputer. Covers the development of fundamentals: touch keyboarding techniques, familiarization with keyboard including numbers, introduction of major parts of computer, and skill measurement.

SEC 116—BUSINESS COMMUNICATIONS

3 Credits
Development of communication skills for use in business and industry. Special attention is given to business correspondence and to problems in oral and written communication.

SEC 201—SPECIALIZED FORMATTING/ TRANSCRIPTION

3 Credits
Production techniques which include correspondence, business forms, manuscripts, tabulation, and secretarial projects. Correct use of grammar, spelling, and letter formats are stressed, along with a high degree of productivity and skill. Transcription from machine dictation and introduction to products, services, and terminology encountered in business organizations.

SEC 202—INFORMATION/WORD PROCESSING APPLICATIONS

3 Credits
Knowledge acquired from Information/Word Processing Concepts will be further enhanced as more sophisticated features of a word processing package are learned and applied.

SEC 203—PRINCIPLES OF OFFICE MANAGEMENT

3 Credits
Covers a broad range of topics including: hiring practices, supervision, motivation, decision-making, time, space, and environment management. The course also includes: basic management principles, problem solving techniques, selecting, orienting, and supervising human resources, motivating workers, labor/management relations, office personnel problems and practices, managing office systems and improving productivity.

SEC 204—ADMINISTRATIVE OFFICE PROCEDURES

3 Credits
Emphasizes skills, techniques and attitudes businesses desire in office personnel. Provides experience applying skills and knowledge gained in previous technical courses. Identifies professional standards of conduct and appearance necessary to successfully work in the business environment.

SEC 205—BUSINESS ENGLISH FOR INFORMATION PROCESSING

3 Credits
Basic grammar, punctuation, spelling, proofreading, and other language skills needed in word processing.

SEC 206—SHORTHAND/NOTETAKING III

3 Credits
Review of fundamentals learned in Shorthand/Notetaking I & II. Continued emphasis on skill in taking new matter dictation with more emphasis on transcribing mailable letters. Essentials of good English principles are stressed.

SEC 207—INTEGRATED OFFICE AUTOMATION

3 Credits
Designed to be the culmination of the student's word processing studies. After a complete overview of word processing principles and applications, the student will obtain experience integrating this knowledge with various software packages to solve problems in the electronic office. Development of critical thinking skills is emphasized.

SEC 208—MICROCOMPUTER/WORD PROCESSING

2 Credits
Covers production techniques including typing, formatting, editing, and printing variable output, and use of the electronic dictionary. Includes production applications such as merging letters with mailing lists, math computations during document creation, sorting files, printout of newsletters, and other multiple-column formats.

SEC 209—ADVANCED MICRCOMPUTER/WORD PROCESSING

2 Credits
Techniques for maximizing the operating speed and convenience of a word processing software, including installation with a ram disk and print spooler. Editing macro files with M-Edit and Notebook. Use of ready-

made macros, multiple-column formats, and configuration and operation of software with various types of printers. Electronic grammar checking and other supplementary programs are integrated with the software.

SEC 210—OFFICE SYSTEMS AND TECHNOLOGY MANAGEMENT

3 Credits
Advanced course designed to acquaint the student with the management of office systems, technology, and procedures. Includes the improvement of productivity through technology and systems; optimization of personnel resources; systems selection, configuration, design, and implementation; and procedures development.

SEC 211—WORD PROCESSING FILES MANAGEMENT

3 Credits
Designing and managing the file system -- creating files, adding, revising and deleting files. Designed to demonstrate how to create, use, change, and update files on a word processing system or personal computer using a database software.

SEC 212—MICROCOMPUTER WORD PROCESSING

3 Credits
Deals with business application uses of word processing software on microcomputer work stations. Practical applications in the use of a microcomputer word processing software.

SEC 213—ADVANCED INFORMATION/WORD PROCESSING APPLICATIONS

3 Credits
Introduction to a second software or equipment. Develops the ability to transfer word processing skills.

SEC 214—DESKTOP PUBLISHING

3 Credits
Provides computer skills in the production of camera-ready materials through electronic publishing.

SEC 215—LEGAL TERMINOLOGY/PRACTICE

3 Credits
Provides basic understanding of the secretarial duties and responsibilities pertinent to the legal profession. Presents ethics of law and professional conduct. Includes laboratory experience.

SEC 216—PRACTICUM/INTERSHIP

3 Credits
Students gain on-the-job experience while earning college credits toward an associate degree.

SEC 217—MACHINE TRANSCRIPTION, MEDICAL I

2 Credits
Provides a basic understanding of the techniques of dictation and transcription used by medical assistants.

SEC 281-293—SPECIAL TOPICS IN SECRETARIAL SCIENCES TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

SMALL BUSINESS OPERATIONS

The Small Business Operations program develops the ability to learn and apply the managerial skills needed for self employment and/or for general administrative positions in a variety of business environments. These business environments may include retailing/wholesaling, manufacturing, agriculture, service industries and office administration.

A two-year program, requiring 64 credits leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. Programs are offered in Valparaiso, Columbus, Evansville, Fort Wayne, Indianapolis, Lafayette, Muncie, Richmond, Sellersburg, South Bend, Terre Haute and Madison. Selected courses may be offered at other locations.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM (Pending Approval)

Technical Courses (34 Credits)

Prefix	No.	Title	Semester Credits
BUS	101	Introduction to Business	3
BUS	102	Business Law	3
MKT	101	Principles of Marketing	3
IST	102	Techniques of Supervision I	3
BUS	201	Principles of Management	3
BUS	202	Human Resource Management	3
BUS	203	Entrepreneurship	3
BUS	204	Case Problems in Management	3
MKT	202	Logistics/Purchasing Control	3
XXX	XXX	Electives	7

General Education Courses (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I	3
SCI	XXX	Life and Physical Science Elective	3
SOC	106	Principles of Macroeconomics or	
	107	Principles of Microeconomics	3
XXX	XXX	Social Science or Humanities Course	3

Related Education (6 Credits)

Prefix	No.	Title	
ACC	101	Accounting Principles I	3
ENG	102	English Composition II	3

Regional Electives (6 Credits) 6

Total Credits 64

SMALL BUSINESS OPERATIONS COURSE DESCRIPTIONS

BUS 101—INTRODUCTION TO BUSINESS

3 Credits
Examines our business system in relation to our economic society. Studies business ownership, organization principles and problems, management, control facilities, administration, and development practices of American business enterprises.

BUS 102—BUSINESS LAW

3 Credits
Describes the Judicial system and the nature and sources of law affecting business. Studies contracts, sales, and negotiable instruments with emphasis on Uniform Commerical Code applications. Includes appropriate remedies for breach of contract and tort liabilities. Examines business structures and agency.

BUS 103—OFFICE ADMINISTRATION

3 Credits
Covers broad areas of administrative office services and management, including office organization, site location, layout and environment, records management, systems control, and office communication services and devices.

BUS 104—INVESTMENT

3 Credits
This course presents the basis of investing, with attention to the various ways in which investment vehicles operate.

BUS 107—TRANSPORTATION LAW

3 Credits
Reviews judicial systems and regulatory agencies, regulatory acts, Motor Carrier Act-1980, Staggers Rail Act-1980, obligations, rights and liabilities, regulation of rates and rate-making agreements.

BUS 108—PERSONAL FINANCE

3 Credits
Emphasizes management of individual financial resources for growth and maintenance of personal wealth. Covers home buying and mortgage financing, installment financing, life and health insurance, securities, commodities, and other investment opportunities.

BUS 201—PRINCIPLES OF MANAGEMENT

3 Credits
Focuses on the functions of managers, including the management of activities and personnel. Focus is placed on application of guidance principles in management work.

BUS 202—HUMAN RESOURCE MANAGEMENT

3 Credits
Overview of the activities of a human resource manager with emphasis on employer-employee relations, job analysis and evaluation, salary administration, work measurement and standards, performance appraisal, and legal compliance.

BUS 203—ENTREPRENEURSHIP

3 Credits
Explores business operations for the self-employed or as a manager employed in a small business enterprise.

BUS 204—CASE PROBLEMS IN MANAGEMENT

3 Credits
Applies business concepts and principles to specific case studies or problems.

BUS 205—RISK MANAGEMENT

3 Credits
Examines risks faced by business firms and considers ways of handling them. Covers property, liability, and personal losses, with attention to insurance contracts and their uses. Studies individual life, health, and pension insurance, public policy, government regulations, and social insurance programs.

BUS 207—INTRODUCTION TO INTERNATIONAL BUSINESS

3 Credits
Provides an overview of the international environment within which business operates today. There will be an attempt to demonstrate the global relationships between business activities and how events in one part of the world can influence business decisions and activities in other parts of the world.

BUS 208—ORGANIZATIONAL BEHAVIOR

3 Credits
Studies human behavior in organizations at the individual and group level, including the effect of organizational structure on behavior. Specific attention will be given to using organizational behavior concepts for developing and improving interpersonal skills.

BUS 281-293—SPECIAL TOPICS IN SMALL BUSINESS OPERATIONS TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

STATISTICAL PROCESS CONTROL TECHNOLOGY

The Statistical Process Control program provides students with the opportunity to enter the statistical process and quality control field with application knowledge of the latest concepts in these areas. The SPC or quality control technician, through application of statistical process quality control technology, may advance to supervision or related manufacturing support functions. The program also offers employed persons the opportunity to upgrade skills.

Areas of study consist of courses in statistical process control, quality control, manufacturing, data processing, math, science, and human relations. The emphasis is placed upon advanced statistical concepts, data collection and presentation, machine and process capabilities, advanced measurement systems, control of purchased component quality, and the use of computers for optimum data analysis.

A two-year program, requiring 62 credits, leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. The program is offered at Fort Wayne, Kokomo, Muncie, Terre Haute, Indianapolis and Columbus.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (32 Credits)

Prefix	No.	Title	Semester Credits
SPC	101	Statistical Process Control	3
CPT	101	Data Processing Fundamentals	3
IST	101	Quality Control Concepts and Techniques I	3
IST	102	Techniques of Supervision I	3
IST	215	Purchasing and Inventory Control	3

Seventeen semester credits of regional technical courses are to be selected from the following courses:

SPC	102	Advanced Statistical Process Control
SPC	103	Employee Participation Techniques and Quality Improvements
SPC	104	Introduction to Nondestructive Testing
SPC	105	Nondestructive Testing Applications I
SPC	106	Nondestructive Testing Applications II
SPC	107	Quality Control Concepts and Techniques
SPC	108	Quality Control Engineering Principles and Techniques
SPC	109	Engineering Materials Quality Control
SPC	110	Quality Control Engineering Theory and Applications
SPC	111	Reliability Objectives
SPC	112	Reliability Techniques
SPC	201	Analysis of Metallurgical Failures
SPC	204	Statistical Concepts and Techniques
SPC	205	Nondestructive Tests
SPC	206	Mechanical Metrology
SPC	207	Electrical Metrology
SPC	281-293	Special Topics in Statistical Process Control (1-5 Credits)
AMT	101	Manufacturing Processes
BUS	101	Introduction to Business
IMT	102	Introduction to Print Reading
IST	104	Techniques of Supervision II
IST	203	Reliability Objectives
IST	206	Time and Motion Study
IST	207	Manufacturing Costs and Value Analysis
IST	208	Materials Handling
IST	211	Labor Relations

Related Education (6 Credits)

XXX	XXX	Regional Technical Course	3
XXX	XXX	Regional Technical Course	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
SOC	101	Human Relations	3
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I or MAT 104 Algebra/Trigonometry I	3
SCI	101	Physical Science or SCI 103 Physics I	3
XXX	XXX	Social Science or Life/Physical Science Course	3

Regional Electives (8 Credits) 8

Total Credits 64

STATISTICAL PROCESS CONTROL TECHNOLOGY COURSE DESCRIPTIONS

SPC 101—STATISTICAL PROCESS CONTROL

3 Credits
Fundamental tools of statistical process control used in industry to reduce cost and increase productivity, at a predictable quality level. Emphasis on principles and techniques of statistical process controls applied to prevention instead of detection of problems.

SPC 102—ADVANCED STATISTICAL PROCESS CONTROL

3 Credits
Advanced techniques used in industry to ensure economic production of goods based on defect prevention rather than defect detection. Deals with modification change or adjustment processes based on statistical evidence.

SPC 103—EMPLOYEE PARTICIPATION TECHNIQUES & QUALITY IMPROVEMENTS

3 Credits
The development of an employee involvement program such as "circle," "team," "group" and other concepts. Includes problem-solving techniques of brainstorming, cause and effect diagrams, data gathering, check sheets, Pareto analysis, central location, frequency distribution, and histograms. Covers the role of management and employees in the process and relationship to participative management.

SPC 104—INTRODUCTION TO NONDESTRUCTIVE TESTING

2 Credits
This course will acquaint the student with the principles and various types of nondestructive examination methods, their advantages, limitations, and applications.

SPC 105—NONDESTRUCTIVE TESTING APPLICATIONS I

3 Credits
Theoretical and practical aspects of NDE in the following areas are covered: liquid penetrant, ultrasonic testing, magnetic particle testing, and visual inspection.

SPC 106—NONDESTRUCTIVE TESTING APPLICATIONS II

3 Credits
Theoretical and practical aspects of NDE in the following areas are covered: radiography, eddy current testing, acoustic emission, and leak testing.

SPC 107—QUALITY CONTROL CONCEPTS AND TECHNIQUES

3 Credits
Emphasizes recent technological developments in quality control.

SPC 108—QUALITY CONTROL ENGINEERING PRINCIPLES AND TECHNIQUES

3 Credits
Presents principles and techniques of modern quality control engineering, with attention to management, engineering, economic and production factors. Emphasizes the assurance of quality at the hardware, processing, and systems levels.

SPC 109—ENGINEERING MATERIALS

3 Credits
Includes the basic principles of metallurgy and the properties of materials in the section of parts and manufacturing processes. Explores the various ways in which

the strength and hardness of metals can be altered by heating and cooling. Ceramics, composites, polymers, and other exotic metals are examined.

SPC 110—QUALITY CONTROL ENGINEERING THEORY AND APPLICATIONS

3 Credits
Presents current theory and applications of quality engineering for assurance and verification of product quality at the hardware, processing and systems levels. Emphasizes statistical analysis, laboratory experiments, and test and case problem solving applications.

SPC 111—RELIABILITY OBJECTIVES

3 Credits
Introduces the development and principles of reliability engineering. Establishes the mathematical and physical bases of reliability and applies the basic elements of reliability data analysis. Surveys concepts basic to modern reliability requirements, with emphasis on practical applications in manufacturing processes and production operations.

SPC 112—RELIABILITY TECHNIQUES

3 Credits
Study of reliability techniques and applications designed to obtain or improve reliability analysis.

SPC 201—ANALYSIS OF METALLURGICAL FAILURE

3 Credits
Study of the factors responsible for the failure of components or structures, which may be motivated by either sound engineering practice or by legal considerations. Covers the proper application of failure analysis techniques to provide valuable feedback to design problems and material limitations.

SPC 202—PROCESS CONTROL GAUGING AND MEASUREMENTS

3 Credits
Deals with the science of measurement for obtaining accurate and reliable data, using computerized statistical process control, and mechanical metrology. Includes selection of various instruments for specific applications.

SPC 203—CODES, SPECIFICATIONS AND PROCEDURES INTERPRETATIONS

3 Credits
Explores the different types of codes, specifications and procedures used in modern industry and provides opportunity for use and interpretation. Blueprint reading is included.

SPC 204—STATISTICAL CONCEPTS AND TECHNIQUES

3 Credits
Presents various topics pertaining to statistical applications of quality control, including frequency distribution, probability theory and applications, and sampling techniques.

SPC 205—NONDESTRUCTIVE TESTING

3 Credits
Presents an overview of the relationship of nondestructive testing to the total quality function. Attention is given to the advantages and limitations of various test methods.

SPC 206—MECHANICAL METROLOGY

3 Credits
Provides instruction and laboratory experiments in the use of mechanical testing and measurement equipment for quality control.

SPC 207—ELECTRICAL METROLOGY

3 Credits
Offers instruction and laboratory experiments in the use of electrical testing and measurement equipment for quality control.

SPC 281-293—SPECIAL TOPICS IN STATISTICAL PROCESS CONTROL TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

DIVISION OF VISUAL COMMUNICATIONS TECHNOLOGIES

The Division of Visual Communications Technologies offers opportunities to combine creative talent with practical applications. Hands-on instruction encourages originality, technical development, and familarity with sophisticated equipment in the graphics and media field. Courses are structured to give a broad understanding of principles and to develop the skills needed for their efficient and effective commercial use. The student is advised to contact the nearest center concerning specific courses and program offerings.

COMMERCIAL VIDEO TECHNOLOGY

The Commercial Video Technology program prepares students for a professional career in the visual communications field. The program is reflective of the visual communications industry's needs and standards. The program provides experiences in research, problem solving and hands-on-procedures in video and multi-image program production.

The program focuses upon pre-production planning, production, post-production and distributive procedures. Students learn to produce scripts and storyboards, plan activities, develop production schedules and produce a project budget based upon production costs. In video production, students learn to use all appropriate types of equipment, direct the production and supervise production personnel. Students gain experience in studio and remote location techniques. Post production activities include audio dubbing, voice over narration, roll back or time code editing, creation of computer graphic visuals, animation, and character generated titling. Students learn techniques in audio recording, mixing and electronic audio enhancement, using both reel-to-reel and cassette systems. Students also learn techniques in 35mm photography and multi-image controlled micro-processor slide production.

The faculty bring to the classroom the knowledge and procedures they gained through their professional activities and industry associations. A student may elect to do an externship at an area organization which has a video or AV department. All students produce an exit portfolio which demonstrates the quality and scope of their knowledge and skills.

The Associate in Applied Science degree in Commercial Video Technology requires 72 credits for completion and can be completed in 4 semesters. The program is offered at South Bend.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (36 Credits)

Prefix	No.	Title	Semester Credits
AVC	101	Audio/Video Systems Theory	3
AVC	102	Audio/Video Equipment and Maintenance	3
AVC	104	Audio Production I	3
AVC	105	Video Production I	3
AVC	106	Production Planning	3
AVC	107	Video Production II	3
AVC	108	Script Writing	3
AVC	109	Multi-Track Sound System	3
AVC	110	Video Tape Editing	3
AVC	201	Advanced Audio Production	3
AVC	202	Advanced Video Production	3
AVC	203	Multi-Image Design	3

Technical Related (6 Credits)

ART	204	Art History Survey I	3
ART	208	Art History Survey II	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
SOC	102	Introduction to Psychology	3
SOC	104	Introduction to Sociology	3
MAT	107	Math of Finance	3
SCI	101	Physical Science	3

Regional Electives (12 Credits) 12

Total Credits 72

COMMERCIAL VIDEO TECHNOLOGY COURSE DESCRIPTIONS

AVC 101—AUDIO/VIDEO SYSTEMS THEORY

3 Credits
The theory and practices of electronic systems as related to audio and video recording and playback systems. Students will learn about amplification, modulation, equalization and signal processing.

AVC 102—AUDIO/VIDEO EQUIPMENT USE AND MAINTENANCE

3 Credits
Hands on experiences in set-up, maintenance and utilization of AV equipment such as film projection systems, overhead projectors, audio and video playback and recording systems and 35mm projection systems.

AVC 104—AUDIO PRODUCTION I

3 Credits
Provides knowledge and studio practices necessary to successfully perform sound recording, editing and narration. Skill development in selecting microphones for specific use, and basic audio mixing.

AVC 105—VIDEO PRODUCTION I

3 Credits
Covers video recording systems, systems design and videography for post-production editing. Course projects include studio lighting, hidden "miking" , audio "dubbing" , titling and supportive production procedures such as inter-connecting equipment, operating video cameras and proper video recorder operation.

AVC 106—PRODUCTION PLANNING

3 Credits
Focuses on knowledge and skills needed to prepare objectives, audience analysis, and overall planning for video and audio productions. Students learn to develop visual flow and continuity, and apply principles of visual design to video storyboards. Special attention is given to coordinating audio cues to visual action.

AVC 107—VIDEO PRODUCTION II

3 Credits
Course activities include remote video "shoots" planning, such as location scouting and site preparation. Projects in lighting, miking, camera and recorder set-up, and on-location directing.

AVC 108—SCRIPT WRITING

3 Credits
Projects in developing scripts for specific markets such as commercial, industrial, public information and educational. Specific scripting functions of format selection, content organization, message design and audio and visual cues are included. Emphasis is on instructional design in scripting.

AVC 109—MULTI-TRACK SOUND SYSTEMS

3 Credits
Theory and application of multiple track audio recording. Hands-on studio practice includes projects in electronic reverberation, parametric equalization and audio

special effects. Special attention is given to timing, pacing, and stereo imaging in mixdown.

AVC 110—VIDEO TAPE EDITING

3 Credits
Techniques and procedures in electronic video tape editing. Projects include assemble and insert editing, audio dubbing, lip sync and micro processor controlled editing. Both rollback and time code editing systems are covered with emphasis on the advantages and processes of each system as related to audio and video signal.

AVC 201—ADVANCED AUDIO PRODUCTION

3 Credits
Theory of acoustical principles are applied to projects involving multiple microphone recording, post production sweetening and creation of synthesized sound. Development of critical listening abilities and preparation of audio for media distribution.

AVC 202—ADVANCED VIDEO PRODUCTION

3 Credits
Combines all aspects of video production for a comprehensive program: budgeting, procedures for staff assignments, and techniques of client relations. Projects include generation of computer graphics, real-time animation, and electronic image enhancement.

AVC 203—MULTI-IMAGE DESIGN

3 Credits
Students learn to script, storyboard and shoot 35mm slides for a slide tape program. Projects include audio narration production and sequencing on the microprocessor system.

AVC 204—SPECIAL PROJECTS I

3 Credits
Course is designed to accommodate student interest in specific interest areas. Projects are by mutual agreement between faculty and student. Performance and completed work must be portfolio quality and reflect applicability to the main areas of student program.

AVC 205—SPECIAL PROJECTS II

3 Credits
Designed to provide specific experience in selected areas, which may be combined or concentrated. Two projects are recommended and additional projects require instructor approval.

AVC 206—INDEPENDENT STUDY I

3 Credits
Provides the opportunity to design a project for a specific area of a student's program. Development of project plan and expected outcomes. Work is restricted to student program area and must be portfolio quality.

AVC 207—INDEPENDENT STUDY II

3 Credits
Provides opportunity to develop high skills in specific areas of a visual communications program or to elect a course from the college curriculum which is supportive of a career in their chosen program. Other areas might include computer programming, marketing, advertising, an externship or supervision with approval from program chairperson. Program projects require course instructor's approval.

AVC 208—PORTFOLIO PREPARATION

3 Credits
The summary of the student's efforts in the Visual Communications Division. The student's and instructor's efforts are directed to providing a student with quality portfolio work demonstrating knowledge and skills needed to perform as a professional visual artist. Contents of the portfolio should demonstrate knowledge and skills in the major areas of their specific program and in peripheral areas studied through the Independent Studies and Special Projects courses. A resume and cover letter should be considered a necessary part of a completed portfolio. A student may elect to select one credit hour from the required three for a field study for their program. This requires program chairperson approval and can only be elected if portfolio project work can be accomplished in the remaining time frame.

AVC 281-293—SPECIAL TOPICS IN AUDIO VISUAL COMMUNICATIONS TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

COMMERCIAL ART TECHNOLOGY

The Commercial Art Technology program prepares students for a professional career in the visual communications field. The program provides experiences and competency skills in layout design, keylining, storyboarding, black and white illustration, package design, type fitting and specification, computer graphics and pre-printing processes. Special attention is given to designing for print (collateral), space and time. Students learn to develop and produce multi-media campaigns for product and service organizations, corporate logos, corporate identity programs and reproduction quality illustrations. Procedures in research, problem-solving, developing a target marketing plan, concept/theme development, client presentations and studio practices are investigated.

The culmination of the students' activity is the completion of an exit portfolio which demonstrates cumulative skills and knowledge of the graphic design field. The portfolio is the primary tool used in job seeking efforts. Students also develop skills in resume and cover letter writing and interviewing techniques.

There is a continuous interaction between the program and the professional field through the jury evaluation system, guest speakers, field trips, program advisory committees and the field experience programs. Faculty are professionally experienced and bring their expertise into the studio environment.

The Associate in Applied Science degree requires 72 credits for completion and can be completed in 4 semesters. An Associate in Science degree is offered in Evansville, enabling a student to transfer to the University of Southern Indiana. The program is offered in Columbus, Evansville, Sellersburg and South Bend.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (33 Credits)

Prefix	No.	Title	Semester Credits
ART	101	Fundamentals of Design	3
ART	103	Fundamentals of Drawing	3
ART	104	Graphic Design I	3
ART	105	Typography	3
ART	106	Drawing for Layout and Illustration	3
ART	107	Production I	3
ART	108	Graphic Design II	3
ART	109	Production II	3
ART	110	Situation Drawing	3
ART	201	Graphic Design III	3
ART	215	Desktop Publishing	3

General Education Courses (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	XXX	Math Elective	3
SOC	102	Introduction to Psychology	3
SOC	104	Introduction to Sociology	3
SCI	101	Physical Science	3

Related Education (6 Credits) 6

Prefix	No.	Title	
ART	204	Art History Survey I	3
ART	208	Art History Survey II	3

Regional Electives (15 Credits) 15

Total Credits 72

COMMERCIAL ART TECHNOLOGY PROGRAM DESCRIPTIONS

ART 101—FUNDAMENTALS OF DESIGN

3 Credits
Design theory and color dynamics as applied to composing the visual field. The manipulation and use of color is also addressed. Projects in visual design provide experiences in applying design theory.

ART 103—FUNDAMENTALS OF DRAWING

3 Credits
Techniques in contour, gesture and modeled form drawing. Awareness and control of scale, proportion and perspective are developed with studio projects. The effects of lighting, eye level and station point and how they effect the visual are of major concern. Students also learn proper support selection as related to technique and medium used.

ART 104—GRAPHIC DESIGN I

3 Credits
Develops knowledge and skills in creating designs for print (collateral). Provides experiences in designing brochures, posters, stationery packages and newsletters.

ART 105—TYPOGRAPHY

3 Credits
Using type as design element. Includes techniques in the layout of type, typographic history, type specification, copyfitting, copy proofing and marking up type for the typesetter.

ART 106—DRAWING FOR LAYOUT AND ILLUSTRATION

3 Credits
Techniques of developing drawings for layout and illustration in appropriate media.

ART 107—PRODUCTION I

3 Credits
Deals with production techniques and procedures. Course projects provide an experimental base in production techniques.

ART 108—GRAPHIC DESIGN II

3 Credits
Developing skills in the design of space media. Includes experiences in designing newspaper, magazine, outdoor, transit and display advertising. Of special concern will be the relationship of concept to viewer needs and interests.

ART 109—PRODUCTION II

3 Credits
The production of art and mechanicals for space media. Includes: photographic procedures, jobber selection in the areas of printing, typesetting, illustration, and photography, video graphics and desk top publishing.

ART 110—SITUATION DRAWING

3 Credits
Techniques of producing visuals for specific activities and visual situations. Pencil, markers and ink will be used for the drawing projects.

ART 201—GRAPHIC DESIGN III

3 Credits
The planning and development of multi-media campaigns for print, space and time. Focuses on brochures, catalogs, and direct mail print; newspaper, outdoor and magazine space; and television time advertising. Also transit, terminal display and yellow pages space advertising, point-of-purchase display and poster.

ART 202—SPECIAL PROJECTS I

3 Credits
Designed to accommodate student interest in specific areas of interest or in areas where there is a need to strengthen skills. Performance and completed work must be portfolio quality and reflect applicability to the main areas of their program.

ART 203—INDEPENDENT STUDY I

3 Credits
Provides students with opportunities to design projects for specific areas of interest. The project plan must be approved by the instructor. Work is restricted to student program area and must be portfolio quality.

ART 204—HISTORY OF ART SURVEY I

3 Credits
A survey of painting, sculpture and architectural styles dating from ancient Mediterranean cultures to the Renaissance period.

ART 205—SPECIAL PROJECTS II

3 Credits
Designed to provide specific experience in selected areas. Areas may be combined or concentrated. Two projects are recommended and additional projects must have instructor approval. All projects must be approved by the instructor prior to the start-up of project work.

ART 206—INDEPENDENT STUDY II

3 Credits
Skill development in specific areas of a Visual Communications program or a related program such as marketing, advertising, an externship or supervision. Program projects require course instructor's approval. Program chairperson's approval is required to elect non-program coursework.

ART 207—PORTFOLIO PREPARATION

3 Credits
Culmination of student efforts in the Visual Communications Division. Efforts are directed toward providing students with quality portfolio work demonstrating knowledge and skills needed to perform as a professional visual artist. Includes resume and cover letter. A student may elect to select one credit hour from the required three for a field study for their program.

ART 208—HISTORY OF ART SURVEY II

3 Credits
Survey of the painting, sculpture, printing and architecture from the Renaissance through 20th century cultures.

ART 209—AIRBRUSH RENDERING

3 Credits
Presents concepts and practices in the use of the airbrush to render visuals in black and white and in color.

ART 210—ILLUSTRATION TECHNIQUES I

3 Credits
Develops dexterity in the application of transparent and opaque media.

ART 211—CREATIVE ILLUSTRATION CONCEPTS

3 Credits
Introduces montage illustration through experience in actual problems.

ART 212—SPECIAL DARKROOM TECHNIQUES

3 Credits
Examines photographic processes, chemicals, and paper.

ART 213—SPECIALIZED LAYOUT CONCEPTS I

3 Credits
Introduces advanced students to the concept board and its value in selling a campaign. Emphasizes the outdoor board as the initial step in campaign development.

ART 214—SPECIALIZED LAYOUT TECHNIQUES

3 Credits
Advanced study of corporate identity. Emphasis is on the designer's role in creating a desirable, consistent corporate image. Experience with specific design problems.

ART 215—DESKTOP PUBLISHING

3 Credits
A basic course in desktop publishing with special emphasis on transference and application of conventional skills gained in the preparation of mechanicals for printing.

ART 216—COMPUTER GRAPHICS

3 Credits
A study of the historical development of computer images which includes: business graphics, typesetting, software packages, pagination, video and cinematics.

ART 281-293—SPECIAL TOPICS IN COMMERCIAL ART TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

COMMERCIAL PHOTOGRAPHY

The Commercial Photography program prepares students for a professional career in the visual communications field. The program is reflective of and responsive to the industry needs and quality standards—both technical and societal. The program provides experiences and competency skills in camera techniques, both color and black and white darkroom techniques, studio and location lighting for products and portraiture, composition and design, business and communications skills, as well as conceptualization and creative problem solving.

There is a continuous interaction between the program and the professional field through the jury evaluation system, program advisory committees and the field experience programs. Faculty are, primarily, professionally active and bring professional expertise into the studio environment. The culmination of the students' activity is the completion of an exit portfolio which demonstrates cumulative skills and knowledge of the commercial photographic field. The portfolio is the primary tool used in job seeking efforts. Students also develop skills in resume and cover letter writing and interviewing techniques.

The program requires 72 credits for an Associate in Applied Science degree. Technical Certificates are also available in specialized areas. The program is offered in Terre Haute, Columbus, Evansville, South Bend and Sellersburg.

ASSOCIATE IN SCIENCE DEGREE PROGRAM

Technical Courses (39 Credits)

Prefix	No.	Title	Semester Credits
CIP	103	Fundamentals of Design	3
CIP	104	Photography I	3
CIP	105	Photographic Science and Theory I	3
CIP	106	Studio Practice I	3
CIP	107	Photography II	3
CIP	108	Photographic Science and Theory II	3
CIP	109	Studio Practice II	3
CIP	201	Principles of Color Photography	3
CIP	202	Advanced Processes and Techniques	3
CIP	203	Professional Portraiture	3
CIP	204	Commercial Photography Techniques I	3
CIP	205	Commercial Photography Techniques II	3
CIP	211	Portfolio Preparation	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	107	Math of Finance	3
XXX	XXX	Life and Physical Sciences or Social Science Electives	9

Regional Electives (15 Credits) 15

Total Credits 72

COMMERCIAL PHOTOGRAPHY COURSE DESCRIPTIONS

CIP 103—FUNDAMENTALS OF DESIGN

3 Credits
Application flat pattern design concepts to black and white still photography. Projects in visual design provide experience in applying design theory.

CIP 104—PHOTOGRAPHY I

3 Credits
Covers basic black and white photographic processes using 35mm, medium format, and 4 x 5 large format cameras. Basic black and white darkroom processes are taught, as well as basic lighting techniques.

CIP 105—PHOTOGRAPHIC SCIENCE AND THEORY I

3 Credits
Basic theories pertaining to black and white photography. Study of cameras and lenses, characteristics of films and papers and the chemistry of emulsions exposure and development. Includes basic physics of light and filters.

CIP 106—STUDIO PRACTICE I

3 Credits
Introduction to studio work in black and white photography using continuous light sources. Basic set-up techniques and lighting methods for a variety of subject matter. Practice with photo flood lamps and quartz lamps, both floods and spots, and a variety of equipment used to modify light.

CIP 107—PHOTOGRAPHY II

3 Credits
Students will develop advanced camera skills with 35mm, medium format, and view cameras. Techniques for photographing in a variety of picture taking situations will be covered. Special darkroom techniques and processes are included. Good composition and the use of photography as a communication tool will be emphasized.

CIP 108—PHOTOGRAPHIC SCIENCE AND THEORY II

3 Credits
This course covers special black and white processes such as push processing and the zone system. Portable and studio flash systems are studied as well as lighting ratios and the Inverse Square law. Basic processes for reproduction of images are taught.

CIP 109—STUDIO PRACTICE II

3 Credits
Advanced techniques of multiple lighting set ups, studio electronic flash, location lighting, special effects, and large sets.

CIP 110—HISTORY OF PHOTOGRAPHY

3 Credits
Survey of the technological, aesthetic, social, and political changes that the medium of photography has undergone. Nineteenth century processes are studied and recreated. Visits are made to historical archives to view prints.

CIP 201—PRINCIPLES OF COLOR PHOTOGRAPHY

3 Credits
Development of camera and laboratory skills needed for both color negative and color positive process. Work with state-of-the-art equipment. The course encompasses color psychology and esthetics, as well as the physics and the chemistry of color photography.

CIP 202—ADVANCED PROCESSES AND TECHNIQUES

3 Credits
A darkroom course dealing with specialized techniques used by commercial photography labs; masking, internegatives, use of print film, litho film, production techniques, and retouching.

CIP 203—PROFESSIONAL PORTRAITURE

3 Credits
Exploration of approaches and methods in traditional and alternative portraiture in studio and on-location photography. Emphasis is on creative approaches to commercial portraiture.

CIP 204—COMMERCIAL PHOTOGRAPHY TECHNIQUES I

3 Credits
Introduction to studio and lab techniques used in advertising and industrial photography. Business practices

are emphasized, as well as creative problem solving techniques.

CIP 205—COMMERCIAL PHOTOGRAPHY TECHNIQUES II

3 Credits
Special techniques in advertising and industrial photography, such as those used in fashion, food, and product illustration.

CIP 206—SPECIAL PROJECTS I

3 Credits
Accommodates student interest in specific areas of their field in which they wish to concentrate or in areas where there is a need to strengthen skills. Performance and completed work must be portfolio quality and reflect applicability to the main areas of design, production, and/or illustration.

CIP 207—SPECIAL PROJECTS II

3 Credits
Provides specific experiences in selected areas. All projects must be approved by the instructor prior to the start-up of project work.

CIP 208—INDEPENDENT STUDY I

3 Credits
Provides students with opportunities to design a project for specific areas. A plan must be developed to show what the project outcome/results will be. Work is restricted to the program area and must be portfolio quality.

CIP 209—INDEPENDENT STUDY II

3 Credits
Provides opportunities to develop skills in specific areas of a visual communications program or to elect a course from the college curriculum which is supportive of a career in their chosen program. Suggested areas that are not program specific could be computer programming, marketing, advertising, an externship, or supervision.

CIP 210—VISUAL COMMUNICATIONS

3 Credits
Examines visual communications in all visual professions in our society. Provides historical perspectives and encourages development of critical awareness of the contemporary arts.

CIP 211—PORTFOLIO PREPARATION

3 Credits
A summary of student achievements in the Visual Communications Division. Efforts are directed to providing students with quality portfolio work which demonstrates knowledge and skills needed to perform as a professional photographer. The portfolio should demonstrate knowledge and skills in the major program areas and in Independent Studies and Special Projects courses. A student may elect to select one credit hour from the required three for a field study.

CIP 212—BUSINESS OF PHOTOGRAPHY

3 Credits
Examines issues related to managing a photography business. Marketing and promotion, estimating and pricing, legalities, insurance, business correspondence, and the use of computers are included.

CIP 213—COMPUTER GRAPHICS

3 Credits
An introductory course in design with a microprocessor computer terminal. Students produce black and white and color projects with a variety of software packages. Emphasis is on uses of illustration and type of commercial art projects.

CIP 214—JOURNALISTIC AND EDITORIAL PHOTOGRAPHY

3 Credits
Students will photograph events and human interest features to gain experience in contributions to various publications. Establishing visual relations in the photo essay is emphasized.

CIP 215—ADVANCED PORTRAITURE

3 Credits
Further exploration of advanced approaches to portraiture. Emphasis is on creativity and quality.

CIP 216—NATURAL LIGHT PORTRAITURE

3 Credits
Photographing people by natural light including posing techniques, location selection, props, film, and equipment.

CIP 217—FASHION PHOTOGRAPHY

3 Credits
An introduction to the field of fashion photography with emphasis on commercial application.

CIP 218—FINE ART PHOTOGRAPHY

3 Credits
Examination of current issues in non-commercial photography. Explores attitudes of photographers and crit-

ics on a wide range of topics through directed reading, class discussion, and gallery visits.

CIP 219—SPECIAL PHOTOGRAPHIC PROCESSING

3 Credits
This course deals primarily with unconventional photographic processes that are important from a historical viewpoint.

CIP 220—SENSITOMETRY

3 Credits
Estimation of response of photographic materials to radiant energy, including methods of exposing, processing, measurement, and data evaluation.

CIP 221—FIELD STUDY/COOPERATIVE EDUCATION

3 Credits
The course is designed to give students on-the-job experience at a job site that is specifically related to a chosen occupational area.

CIP 222—ELECTRONIC PHOTOGRAPHY

3 Credits
Examines the area of still video photography and various electronic darkroom software packages. Experience with the electronic darkroom environment includes editing processes, manipulating images in black-and-white and color, and working with various output devices.

CIP 281-293—SPECIAL TOPICS IN COMMERCIAL AND INDUSTRIAL PHOTOGRAPHY TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

GRAPHIC MEDIA PRODUCTION TECHNOLOGY

The Graphic Media Production Technology program provides comprehensive instruction to prepare students for entry level positions in the graphic media field. Instructional areas include: art and copy preparation, camera and darkroom fundamentals, layout and stripping flats, platemaking, offset presswork, composition, production control, special effects and ink and paper selection.

The program prepares students for jobs in a variety of fields from the traditional craft area of typographic composition, or pre-press preparatory work, to binding and finishing.

The two-year program, requiring 65 credits, leads to an Associate in Applied Science Degree. The program is offered in Terre Haute.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (35 Credits)

Prefix	No.	Title	Semester Credits
GRA	101	Computer Graphics I	3
GRA	102	Introduction to Machine Printing	3
GRA	103	Photography Fundamentals I	3
GRA	104	Art and Copy Preparation	3
GRA	105	Basic Design Principles	3
GRA	106	Introduction to Color Printing	3
GRA	201	Photomechanical Reproduction	3
GRA	202	Science of Color	3
GRA	203	Graphic Design	3
GRA	204	Designing with Type	3
GRA	206	Budget and Planning	3
GRA	236	Employment Orientation	1
SEC	110	Keyboarding Skill Development	1

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
ENG	103	Speech	3
SOC	101	Human Relations	3
MAT	107	Math of Finance	3
INF	101	Introduction to Microcomputers	3

Regional Electives (12 Credits) 12

Total Credits 65

GRAPHIC MEDIA PRODUCTION TECHNOLOGY COURSE DESCRIPTIONS

GRA 101—COMPUTER GRAPHICS I

3 Credits
Study of the historical development of computer images which includes business graphics, typesetting, software packages, pagination, video and cinematics.

GRA 102—INTRODUCTION TO MACHINE PRINTING

3 Credits
History and overview of the interrelationships of processes, materials, and techniques utilizing equipment and tools necessary in platemaking, bindary/finishing and offset press. Class allows student to take assigned projects from design to bindary.

GRA 103—PHOTOGRAPHY FUNDAMENTALS I

3 Credits
Introductory course in basic black-and-white photography with the 35mm camera. Introduces film development, darkroom techniques and visual interpretation of photographic design problems.

GRA 104—ART & COPY PREPARATION

3 Credits
A foundation course in design, typographic and communication concepts. Traditional techniques as well as computer-aided technologies are used in the consideration of color, format and use of visuals in illustration. Problem solving emphasis with assignments executed through strip-up of the negative into a flat and proofing the same.

GRA 105—BASIC DESIGN PRINCIPLES

3 Credits
An introduction to fundamental design concepts used in two-dimensional media. Explores shape, color, line, pattern & Gestalt principles through creative exercises.

GRA 106—INTRODUCTION TO COLOR PRINTING

3 Credits
A study of basic color theory, materials and methods used in the reproduction processes. Techniques and materials are covered with assignments utilizing different processes including: 4-color from pre-separated negatives, register and run. Includes inks and systems.

GRA 107—COMPOSITION SYSTEMS I

3 Credits
The use, operation, and application of machine principles and mechanisms related to typesetting; laboratory projects in setting composition photographically; utilization and examination of various input systems.

GRA 108—STUDIO PHOTOGRAPHY I

3 Credits
Introduction to basic studio procedure and lighting setups. Control of artificial light and creative compositional techniques are explored through assigned exercises. Procedures in equipment handling, controlling lighting ratios and further contrast and printing techniques in the darkroom.

GRA 109—COLOR METHODS IN PHOTOGRAPHY I

3 Credits
The course is designed to introduce students to color negative photographic materials with 35mm format camera. Topics include processing, printing and application of theories on color and perception.

GRA 110—ADVERTISING DESIGN

3 Credits
Covers newspaper ads, magazine ads, two-color and full-color folders, brochures, calendars and P.O.P. merchandising aids in a comprehensive form for national advertising.

GRA 201—PHOTOMECHANICAL REPRODUCTION

3 Credits
A basic course in image conversion in black and white as well as color theory. Photo chemistry, halftones, darkroom techniques and diffusion transfer are examined.

GRA 202—SCIENCE OF COLOR

3 Credits
Physical properties of light and color, and psychological aspects of color perception and color relationships through creative exercises. Color theories of Itten, Munsell, Goethe, Chevreul and Albers are examined.

GRA 203—GRAPHIC DESIGN

3 Credits
Analysis and review of basic theories of graphic layout and design and their underlying principles and processes.

Includes alphabet design and design language, imposition, design steps, rough, thumbnail, comprehensive and final layout and preparation of dummy.

GRA 204—DESIGNING WITH TYPE

3 Credits
Introduction to Typography. Type classification, identification and selection. Copy fitting, mark-up systems and proofreading. Fundamentals of layout and design for print media.

GRA 205—SURVEY OF PRINTING PROCESSES

3 Credits
Presents topics not normally covered in other courses. Examines those types of printing businesses in local area, utilizing guest lecturers from these businesses. Local market is surveyed and students are responsible for a research project concerning local business with presentation of oral or written report.

GRA 206—BUDGET AND PLANNING

3 Credits
Estimating various types of printing produced by the major processes. Includes use of standard price catalogs, analysis of material, labor and machine cost factors.

GRA 207—AUDIOVISUAL PRESENTATION

3 Credits
The use of design principles in 35mm color transparencies and fundamentals of audio production and editing. Each student will present a slide/tape production that conveys a concept through the effective combination of images, music and/or narration.

GRA 208—STUDIO PHOTOGRAPHY II

3 Credits
Concentration in advertising photography including fashion and product shots. Advanced studio lighting techniques and medium-to-large format camera operation with special purpose films, high print quality and technical control are emphasized.

GRA 209—PHOTOGRAPHY FUNDAMENTALS II

3 Credits
Advanced printing techniques introducing the use of medium-format cameras and black-and-white films, flash illumination and special purpose films.

GRA 210—PORTRAITURE

3 Credits
Designed to examine approaches and methods in traditional and alternative portraiture in studio and on-location photography. Emphasis is on creative approaches to commercial portraiture. Special darkroom techniques for printing portraits is introduced.

GRA 211—FLEXOGRAPHY

3 Credits
Includes study of high-speed roll-fed press operation. Emphasis on safety, set-up and register. Theory class will also utilize field trips to flexo-webb printing plants.

GRA 212—COMPOSITION SYSTEMS II

3 Credits
An extension of the skills introduced in Composition System I, with assignments of greater difficulty and complexity utilizing available equipment, including computer controlled graphics and text.

GRA 213—DESKTOP PUBLISHING

3 Credits
Covers computer techniques in pre-preparatory and preparatory composing procedures, including typesetting and typographic concepts. Emphasis is on computer skills and output.

GRA 214—SCREEN PRINTING

3 Credits
Explores screen construction and process reproduction methods. Includes paper, tusch, knife-cut and photographic stencils and printing media surfaces applications.

GRA 215—COMPUTER GRAPHICS II

3 Credits
An overview of computers and their creative potential in graphic design focusing on videotext graphics. Students create and manipulate images using a keyboard and a graphics tablet. Some projects will be photographed for student portfolio.

GRA 216—BUSINESS OF GRAPHIC DESIGN

3 Credits
Examines operational procedures that have worked successfully to build efficient, effective design departments, while maintaining aesthetic consideration.

GRA 217—SAFETY TECHNIQUES

1 Credit
Proper procedures, rules, regulations and safety requirements for fire, electrical, mechanical and chemical dangers. Examines use of color to identify hazards and emergency measures. Emphasis is on shop safety,

layout, storage and practices to avoid accidents and injuries.

GRA 218—TROUBLESHOOTING AND MAINTENANCE

1 Credit
Upkeep, lubrication and techniques of spotting malfunctioning equipment and corrections on problem concerning paper feed, dampening, inking systems.

GRA 219—SPECIAL PROBLEMS IN PRINTING

3 Credits
Individual investigation, research, studies and/or surveys of selected problems will enable students to identify objectives, procedures, equipment and key check points on selected projects. Includes color separation, plant management and quality control.

GRA 220—LOCATION PHOTOGRAPHY

3 Credits
Deals with special problems in the control of natural and artificial light in on-location photography, with emphasis on publicity-related photography for community effort.

GRA 221—COPY METHODS

3 Credits
Introduction to methods used in high-contrast and continuous tone flat copy work. Uses 35mm and 4 x 5 films in color and black-and-white, emphasis on appropriate printing skills.

GRA 222—LARGE FORMAT PHOTOGRAPHY

3 Credits
Introduction to the operational features of the view camera in studio and on-location photography with black-and-white films. Emphasizes professional standards in execution and presentation.

GRA 223—IMAGES IN OUR CULTURE

3 Credits
Examines images and issues represented in fine-art and mass media publications. Students gain historical perspective and are encouraged to develop a critical awareness of contemporary image-making issues through discussion and written exercises.

GRA 224—PHOTOJOURNALISM

3 Credits
Students photograph community events and human interest features to gain experience in freelance contributions to local publications. Gain skills in fact gathering, editorial writing, developing of a story and establishing visual relationships in the photo essay. Focuses on contemporary photojournalism.

GRA 225—COLOR METHODS IN PHOTOGRAPHY II

3 Credits
Advanced application of color film materials in studio and on-location photography. Study of contemporary color photography in periodicals. The fine-tuning of exposure and printing skills is emphasized.

GRA 226—HISTORY OF PHOTOGRAPHY

3 Credits
Designed to familiarize students with the advances in photography since its invention. Explores the interrelationship between the technical, aesthetic and commercial aspects of photography through selected readings and gallery visits.

GRA 227—SENSITOMETRY FUNDAMENTALS

3 Credits
The fundamental operation, principles and equipment associated with reflection and transmission densitometer basics. Students will produce large format negatives in black-and-white and in color for the purpose of controlling densities through exposure and development.

GRA 228—STUDIO PHOTOGRAPHY III

3 Credits
Builds on previous experience gained in the studio. The coursework is comprised of individual projects developed by students. Students will execute a coherent body of studio work to become part of their final portfolios. Regularly scheduled individual evaluations are considered part of the coursework.

GRA 229—DIGITIZED PHOTOGRAPHY

3 Credits
Introduces methods of transferring line illustration and continuous tone photographs to the computer screen for further modification. Students will also digitize video images. Creative exercises strengthen student skills in advertising design and desktop publishing.

GRA 230—PHOTOGRAPHY AND TYPOGRAPHY

3 Credits
Commercially oriented approaches to the combination of type and photography. Creative exercises in captioning and advertising photography are formulated to

allow students to combine principles of design, advertising and photography.

GRA 231—ARCHITECTURAL AND INTERIOR PHOTOGRAPHY

3 Credits
Advanced study of special lighting and placement problems as encountered in on-location photography with large-format cameras. For those students already familiar with artificial and existing-light controls.

GRA 232—FINE ART APPROACHES IN PHOTOGRAPHY

3 Credits
An introduction to a number of non-silver photographic processes and the experimental application of handwork to these and silver-gelatin images. Includes survey of fine art, photographic history and technical overview of 19th and 20th centuries.

GRA 233—SPECIAL PROBLEMS IN PHOTOGRAPHY

3 Credits
For sixth-quarter majors. Individual, long-term projects in areas appropriate to student needs and interests. Includes weekly evaluation of progress by instructor and program advisor. Work produced to be included in final portfolio, and considered preparatory for transfer to a baccalaureate program.

GRA 234—SPECIAL PROBLEMS IN ADVERTISING

3 Credits
Covers advertising in the U.S. economy, broadcast regulations, the advertising media, audience measurement and the future of cable and pay television.

GRA 235—AGENCY OPERATIONS

3 Credits
Considers methods agencies use to prepare advertising budgets and to develop creative and media strategies. Other aspects involved in day-to-day agency business practices will also be covered.

GRA 236—EMPLOYMENT ORIENTATION

1 Credit
Investigation of employment opportunities in the printing field. Examines sources of occupational information and preparation for job-seeking.

GRA 281-293—SPECIAL TOPICS IN GRAPHIC MEDIA TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

INTERIOR DESIGN TECHNOLOGY

The Interior Design Technology program is designed to prepare graduates to participate in the field as qualified designers and to participate in professional association activities. Minor options permit specialization in various areas such as computer-aided design.

The structure of courses in drafting, color and light, materials of interior design and the elements and principles of design and composition permit students to link theory and practice. Students are assisted in developing individual portfolios by working on client profiles and problem solving, while executing projects in various media.

Connecting students of the Interior Design Program to potential employers is accomplished through projects juried by area professionals, supervised work in design problem-solving for community service organizations, placement in field study, related field trips, and active faculty links within the design profession.

The two-year program requiring 64 semester hours leads to an Associate in Applied Science degree. Technical Certificates are also available in specialized areas. Programs are offered at South Bend, Kokomo, and Evansville.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (34 Credits)

Prefix	No.	Title	Semester Credits
INT	101	Fundamentals of Interior Design	3
INT	102	Structural Systems	3
INT	103	History of Art and Design I	3
INT	104	Survey of Textiles	3
INT	105	Interior Design Graphics	3
INT	106	Environmental Systems	3
INT	107	History of Art and Design II	3
INT	108	Environmental Psychology	3
INT	201	Materials of Interior Design	3
INT	202	Contract Environments	3
INT	203	Professional Practices	4

General Education Courses (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
ENG	103	Speech	3
MAT	107	Math of Finance	3
SOC	101	Human Relations	3

Regional Electives (15 Credits) 15

Total Credits 64

INTERIOR DESIGN TECHNOLOGY COURSE DESCRIPTIONS

INT 101—FUNDAMENTALS OF INTERIOR DESIGN

3 Credits
Survey of the elements and principles of Interior Design as applied to active living environments.

INT 102—STRUCTURAL SYSTEMS

3 Credits
Provides the interior design student with a basic knowledge of building structures, construction techniques, and building materials. Introduces technical skills needed to read and draft blueprints.

INT 103—HISTORY OF ART AND DESIGN I

3 Credits
Survey of the development of the interrelationship of architecture, art, and interior environments from antiquity through the 18th century.

INT 104—SURVEY OF TEXTILES

3 Credits
Basic textile identification and classification from fiber to finish.

INT 105—INTERIOR DESIGN GRAPHICS

3 Credits
The elements of two and three dimensional design concepts as related to interior representational drawings. Emphasis is on interior space perception for realistic presentation to clients.

INT 106—ENVIRONMENTAL SYSTEMS

3 Credits
Introduction to environmental systems concepts in architecture. Drafting exercises are utilized as an aid to understanding these systems.

INT 107—HISTORY OF ART AND DESIGN II

3 Credits
Continuation of the study of the development of the interior environment from the 19th century to the present.

INT 108—ENVIRONMENTAL PSYCHOLOGY

3 Credits
Emphasizes the relationship between individuals and their surroundings. Explores the psychological concepts pertaining to the design of space.

INT 201—MATERIALS OF INTERIOR DESIGN

3 Credits
Examines physical properties and characteristics of various building materials including textile products. Addresses problems in specifying, estimating, and installing these materials.

INT 202—CONTRACT ENVIRONMENTS

3 Credits
An introduction to the various categories of commercial design and their specialized requirements.

INT 203—PROFESSIONAL PRACTICES

4 Credits
Introduction to business principles and practices as they relate to the Interior Design Profession. Topics include business and installation procedures, methods of charging, and the steps involved in business formation.

INT 204—COLOR AND LIGHT

3 Credits
Introductory study of color theory, including additive and subtractive systems. Covers the effects of various types of lighting on color.

INT 205—HOTEL AND RESTAURANT DESIGN

3 Credits
Intensive study of all aspects of the planning of hotel and restaurant installations.

INT 206—CUSTOM DESIGN IN INTERIORS

3 Credits
Development of original design for furnishings, textiles and accessory pieces.

INT 207—STUDIO I

3 Credits
Laboratory experience with case studies designed to provide experience in creating a complete design selection.

INT 208—STUDIO II

3 Credits
Continuation of Studio I

INT 209—PORTFOLIO PREPARATION

3 Credits
Summary of student achievements in the Interior Design

department. Efforts are directed to providing student with quality portfolio work which demonstrates the knowledge and skills needed to perform as a professional interior designer.

INT 210—PROJECT MANAGEMENT

3 Credits
The selection of accessories and specific procedures for installation of various categories of materials. The sequence of installation procedures for a job from the signing of the contract to completion of the job.

INT 211—SUPPORT SYSTEM PLANNING

3 Credits
Requirements and space planning for kitchens, baths, and support systems. Standardization of cabinetry and fixtures, as well as expectation for the areas in the planning.

INT 212—HISTORIC PRESERVATION

3 Credits
The process of establishing historic properties will be researched. Preservation, restoration and adaptive reuse will be differentiated as applied to both public and private properties.

INT 213—FIELD STUDY I

3 Credits
Field placement or research project within student's occupational specialty, to include collection and analysis of data and work experience in business and industry.

INT 214—FIELD STUDY II

3 Credits
Continuation of Field Study I.

INT 215—INDEPENDENT STUDY

3 Credits
Projects will be developed from specialty areas which will allow design resolution, presentation and job management to be experienced by the students.

INT 216—INDEPENDENT STUDY II

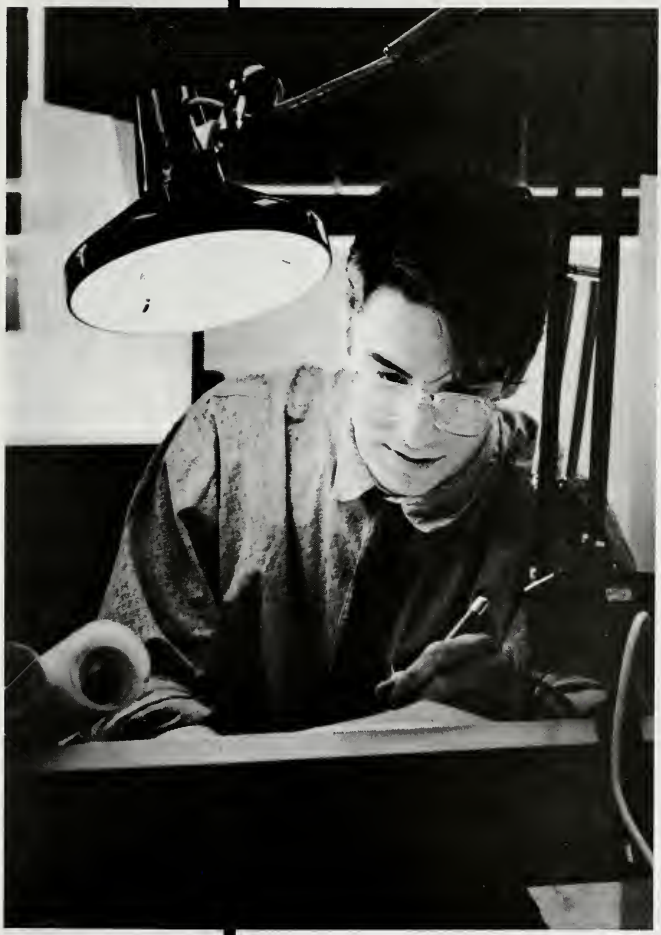
3 Credits
Continuation of Independent Study I incorporating community service projects, and barrier free design.

INT 217—VISUAL MERCHANDISING

3 Credits
Principles of display and special techniques and equipment required in display work.

INT 281-293—SPECIAL TOPICS IN INTERIOR DESIGN TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).



DIVISION OF HUMAN SERVICES AND HEALTH TECHNOLOGIES

The Division of Human Services and Health Technologies recognizes the increasing employment opportunities in the expanding health field. Ivy Tech prepares students to become technically trained members of the health care team. Classroom, laboratory, and clinical experience prepare students for service in hospitals, laboratories, nursing homes, child-care facilities, physicians' offices, and other health care-related settings.

College health occupation programs are recognized and accredited by appropriate external accrediting agencies. The student is advised to contact the nearest center for information concerning programs and course offerings.

CHILD CARE TECHNOLOGY

The Child Care Technology program focuses on early childhood growth and development including adult-child relationships. Emphasis is placed on the development of skills and techniques for providing appropriate environments and care for young children. Instruction is provided in the physical, emotional, social, and cognitive areas of early childhood. The training is appropriate for candidates seeking the Child Development Associate (CDA) credential. The student develops competencies through classroom instruction, observation, and participation in early childhood settings.

Employment opportunities include: Day Care, Nursery School, Head Start, Family Day Care, Pediatrics Setting, Nanny Care, School Aide, School Age Care, Employer Sponsored Day Care, Infant/Toddler Care, Resource and Referral Services, Intergenerational Care, Respite/Sick Care, and other settings as they develop.

The two-year program, requiring 63 credits, leads to the Associate in Applied Science Degree. Technical Certificates are also available in specialized areas.

Programs and courses are offered in Fort Wayne, Muncie, Richmond, and Indianapolis. In addition, selected courses may be available in other regions.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (39 Credits)

Prefix	No.	Title	Semester Credits
CCT	101	Introduction to Early Childhood Education	4
CCT	102	Child Growth and Development I	3
CCT	103	Health, Safety and Nutrition	3
CCT	104	Practicum I	3
CCT	105	Seminar I	2
CCT	108	Curriculum I	4
CCT	112	Child Growth and Development II	3
CCT	201	Curriculum II	4
CCT	203	Practicum II	3
CCT	204	Seminar II	2
CCT	205	Children's Literature and Language Arts	3
CCT	207	Practicum III	3
CCT	208	Seminar III	2

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
MAT	107	Math of Finance	3
SCI	101	Physical Science or	
SCI	109	Biology	3
SOC	101	Human Relations	3
SOC	102	Introduction to Psychology or	
SOC	103	Intercultural Relations	3
Regional Electives (6 Credits)			6
		Total Credits	63

CHILD CARE TECHNOLOGY COURSE DESCRIPTIONS

CCT 101—INTRODUCTION TO EARLY CHILDHOOD EDUCATION

4 Credits
A basic introduction to philosophy of early childhood education. Includes theories of discipline, parent involvement, self-concept, and an overview of various early childhood settings. (Lecture, field trips, and observation.)

CCT 102—CHILD GROWTH AND DEVELOPMENT I

3 Credits
Introductory study of the physical, social, emotional and cognitive development of the young child, conception to age three, as well as quality care and education of infants and toddlers. (Lecture and observation.)

CCT 103—HEALTH, SAFETY AND NUTRITION

3 Credits
Analysis of basic safety, health, and nutrition needs. Applications as they relate to early childhood programs are emphasized.

CCT 104—PRACTICUM I

3 Credits
Provides opportunity for practical experience through observation and supervised participation in child care settings. Successful completion of the practicum is required to advance to Practicum II and III.

CCT 105—SEMINAR I

2 Credits
Companion course to Practicum I. Overview of Child Development Associate (CDA) competencies and observation techniques and skills.

CCT 108—CURRICULUM I

4 Credits
Examines materials, methods, and teaching for providing creative experiences for the young child. Offers appropriate music, movement, art, drama, etc. experiences for use in early childhood settings. Reviews theories of development of the young child.

CCT 112—CHILD GROWTH AND DEVELOPMENT II

3 Credits
A lecture/laboratory course studying the physical, social, emotional, and cognitive development of the young child, 3-8 years.

CCT 201—CURRICULUM II

4 Credits
Students will review cognitive theories to develop appropriate practices in activities as they relate to problem solving skills, math, science, and social studies in early childhood settings. Reviews multi-cultural education.

CCT 202—ISSUES AND RESOURCES

3 Credits
Covers current early childhood issues, ethical and legal responsibilities, and working relationships with families and community resources. Analyzes the caregiver's role as a member of a multidisciplinary team.

CCT 203—PRACTICUM II

3 Credits
Provides opportunity for practical experience through observation and supervised participation in child care settings. Successful completion of the practicum is required to advance to Practicum III.

CCT 204—SEMINAR II

2 Credits
Companion course to Practicum II. Further development of observation skills and techniques will be explored. An examination of positive guidance techniques to meet individual and group needs is presented.

CCT 205—CHILDREN'S LITERATURE AND LANGUAGE ARTS

3 Credits
Provides for understanding of the development and acquisition of language in order to provide materials and activities for optimum growth. Students will explore and evaluate literature for young children. Introduces audiovisual material, methods, techniques, and various types of equipment which are utilized in early childhood programs.

CCT 206—EARLY CHILDHOOD ADMINISTRATION

3 Credits
Introduces principles of managing a child care program. Emphasizes the role of the manager to include personnel and program administration and fiscal management. Client-community relations are explored.

CCT 207—PRACTICUM III

3 Credits
Provides opportunity for practical experience through observation and supervised participation in child care settings.

CCT 208—SEMINAR III

2 Credits
Companion course to Practicum III. The integration of skills is employed to develop a thematic teaching unit.

CCT 210—INTRODUCTION TO IN-HOME CARE

4 Credits
Offers an overview of child care offered in a home-like setting. The course includes providing a safe, healthy learning environment in the home setting, parent-provider relationships, and recommendations for developing a professional support system.

CCT 211—SCHOOL AGE PROGRAMMING

3 Credits
Examines materials, methods, and teaching styles for providing creative experiences for the school age child. Offers experiences such as appropriate music, movement, art, and drama for use in school age child care settings. Reviews theories of adolescent growth and development.

CCT 212—ADOLESCENT CHILD GROWTH AND DEVELOPMENT

3 Credits
A lecture/laboratory course studying the physical, social, emotional, and cognitive development of the child, 8-15 years.

CCT 213—INFANT/TODDLER CARE PROGRAMMING

3 Credits
A lecture/laboratory course studying the physical, social, emotional, and cognitive development of the child 0-36 months.

CCT 214—FAMILY DEVELOPMENT

3 Credits
Examines the stages of the family life cycle and interpersonal relationships among family members.

CCT 215—CHILD DEVELOPMENT ASSOCIATE PREPARATION

4 Credits
Course meets requirements of the Council for Early Childhood Professional Recognition for academic preparation for the Child Development Associate credential. Course will provide students with the technical knowledge to support competent performance in a child care setting. The course is organized around the CDA competencies.

CCT 281-293—SPECIAL TOPICS IN CHILD CARE TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

EARLY CHILDHOOD DEVELOPMENT

The Associate in Science degree program in Early Childhood Development is designed for students who wish to earn a career-oriented degree at Ivy Tech and who plan to continue their education to a baccalaureate degree in Early Childhood/Elementary Education.

Employment opportunities upon completion of the A.S. degree are the same as those described under A.A.S. Child Care Technology program. Students who complete the Baccalaureate degree will qualify for certification as elementary teachers in the State of Indiana. The program is offered at Richmond.

ASSOCIATE IN SCIENCE DEGREE PROGRAM

Technical Courses (31 Credits)

Prefix	No.	Title	Semester Credits
ECD	101	Introduction to Early Childhood Education	4
ECD	102	Child Development I	3
ECD	103	Child Development II	3
ECD	105	Curriculum I	4
ECD	106	Early Childhood Issues and Resources	3
ECD	201	Advanced Practicum I	3
ECD	202	Seminar I	2
ECD	203	Advanced Practicum II	3
ECD	204	Seminar II	2
ECD	208	Curriculum II	4

General Education Requirements (31 Credits); to be completed at a four-year institution.

Prefix	No.	Title	
		English	3
		Public Speaking	3
		Children's Literature	3
		Math For Elementary Teachers I	3
		Computer Literacy for Education Majors	3
		Earth Science for Elementary Teachers	4
		Basic Science Skills	3
		American History or U.S. History	3
		Introduction to Music Fundamentals	3
		Crafts and Design	3
		Total Credits	62

EARLY CHILDHOOD DEVELOPMENT COURSE DESCRIPTIONS

ECD 101—INTRODUCTION TO EARLY CHILDHOOD EDUCATION

4 Credits
A basic introduction to philosphies of early childhood education. Includes theories of discipline, parent involvement, self-concept, and an overview of various early childhood settings. (Lecture, field trips, and observation.)

ECD 102—CHILD DEVELOPMENT I

3 Credits
Introductory study of the physical, social, emotional and cognitive development of the young child, conception to age three, as well as quality care and education of infants and toddlers. The influence of cultural environment and individual differences in development are considered. (Lecture and observation.)

ECD 103—CHILD DEVELOPMENT II

3 Credits
A lecture/laboratory course studying the physical, social, emotional, and cognitive development of the young child, four to eight years.

ECD 105—CURRICULUM I

4 Credits
Examines materials, methods, and teaching for providing creative experiences for the young child. Offers appropriate music, movement, art, drama, etc. experiences for use in early childhood settings. Reviews and analyzes theories of development of the young child.

ECD 106—EARLY CHILDHOOD ISSUES AND RESOURCES

3 Credits
Covers current issues, ethical and legal responsibilities and working relationships with families and community resources. Analyzes the caregiver's role as a member of a multidisciplinary team.

ECD 201—ADVANCED PRACTICUM I

3 Credits
Provides opportunity for practical experience through observation and supervised participation in child care settings. Successful completion of the practicum is required to advance to Practicum II.

ECD 202—SEMINAR I

2 Credits
Companion course to Advanced Practicum I. Overview of Child Development Association (CDA) competencies and observation techniques and skills. An examination of positive guidance techniques to meet individual and group needs is presented.

ECD 203—ADVANCED PRACTICUM II

3 Credits
Provides the final opportunity for practical experience through observation and supervised participation in child care settings.

ECD 204—SEMINAR II

2 Credits
Companion course to Advanced Practicum II. The integration of skills is employed to develop a thematic teaching unit.

ECD 208—CURRICULUM II

4 Credits
Students will review cognitive theories to develop appropriate practices in activities as they relate to problem solving skills, math, science, and social studies in early childhood settings. Reviews multi-cultural education.

ECD 281-293—SPECIAL TOPICS IN EARLY CHILDHOOD DEVELOPMENT

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

DENTAL ASSISTANT

Students in the Dental Assistant Program receive instruction in preparing patients for treatment and in assisting chairside as the dentist examines and treats patients. The dental assistant will expose and process X-ray films, sterilize instruments, provide oral health instruction, assist with record keeping and other office management practices. Students gain necessary knowledge and skills in general education, basic science, dental anatomy and materials, chairside assisting, laboratory techniques, radiology and basic office procedure. In addition to academic and clinical course work on campus, students are provided with practical experience in dental offices under the supervision of college personnel and dental office personnel.

A one-year program, requiring 47 credits, leads to a Technical Certificate. Graduates are eligible to take the certification exam administered by the Dental Assisting National Board, Inc. The program is available at Lafayette.

TECHNICAL CERTIFICATE PROGRAM

Technical Courses (41 Credits)

Prefix	No.	Title	Semester Credits
DEN	101	Basic Integrated Sciences	3
DEN	102	Dental Materials and Laboratory I	3
DEN	103	Dental Anatomy	3
DEN	104	Dental Radiography	3
DEN	105	Preclinical Practice I	4
DEN	106	First Aid/Pharmacology	3
DEN	107	Dental Office Management	3
DEN	108	Preventive Dentistry/Diet and Nutrition	3
DEN	109	Dental Materials and Laboratory II	3
DEN	110	Dental Radiography Laboratory	1
DEN	111	Preclinical Practice II	4
DEN	112	Clinical Practice I	1
DEN	113	Clinical Practice II	7

General Education Requirements (6 Credits)

Prefix	No.	Title	
SOC	101	Human Relations	3
DEN	114	Health Office Communications	3
		Total Credits	47

DENTAL ASSISTANT COURSE DESCRIPTIONS

DEN 101—BASIC INTEGRATED SCIENCES

3 Credits
Examines the human body as an integrated unit; includes anatomy, physiology, medical terminology.

DEN 102—DENTAL MATERIALS LABORATORY I

3 Credits
Properties of dental materials, proper modes of manipulation, necessary armamentarium used, and technical duties dental assistants can perform. Stresses clinical behavior of materials and biological factors of importance to dental assistants.

DEN 103—DENTAL ANATOMY

3 Credits
Focuses on oral, head and neck anatomy, basic

embryology, histology, tooth morphology, and charting methods related to the dental field. Includes dental anomalies, pathological conditions, and terminology relevant to effective communication. Also drawing and carving of teeth.

DEN 104—DENTAL RADIOGRAPHY

3 Credits
Principles, benefits, effects and control of X-Ray production. Covers history, radiation sources, modern dental radiographic equipment and techniques, anatomical landmarks dental films and processing. Emphasizes avoidance of errors in exposing and processing dental radiographs.

DEN 105—PRECLINICAL PRACTICE I

4 Credits
Introduces qualifications and legal-ethical requirements of the dental assistant. History and professional organizations are surveyed. Emphasizes clinical environment and responsibilities, housekeeping, chairside assisting, equipment and instrument identification, tray setups, sterilization, characteristics of microorganisms and disease control.

DEN 106—FIRST AID/PHARMACOLOGY

3 Credits
Surveys the most commonly utilized and required first aid measures for emergencies. Examines proper techniques and procedures as well as equipment, medications, and position care of the patient. Reviews anatomy/physiology, and cardiopulmonary rescue as provided by the American Heart Association.

DEN 107—DENTAL OFFICE MANAGEMENT

3 Credits
Principles of administrative planning, bookkeeping, filing, recall programs, banking, tax records, computer software, insurance, office practice, and management as related to the dental office. Attention is given to techniques of appointment control, record keeping, and credit and payment plans.

DEN 108—PREVENTATIVE DENTISTRY/DIET AND NUTRITION

3 Credits
Emphasizes the importance of preventive dentistry and effects of diet and nutrition on dental health. Presents techniques of assisting patients in the maintenance of good oral hygiene.

DEN 109—DENTAL MATERIALS AND LABORATORY II

3 Credits
Continues Dental Materials and Laboratory I.

DEN 110—DENTAL RADIOGRAPHY LABORATORY

1 Credit
Course provides students with opportunity to use manual skills on actual patients, previously practiced on mannequins in Dental Radiography.

DEN 111—PRECLINICAL PRACTICE II

4 Credits
A continuation of Preclinical Practice I. Anesthesia is presented. The following dental specialties are presented: oral and maxillo facial surgery, periodontics, endodontics, pediatric dentistry, orthodontics, prosthodontics, and dental public health. Terminology relevant to this subject is stressed.

DEN 112—CLINICAL PRACTICE I

1 Credit
Applications of manual skills, knowledge of dental materials and clinical procedures in a simulated office situation with actual patients.

DEN 113—CLINICAL PRACTICE II

7 Credits
Provides chairside dental assisting experience in private dental practices in both general and specialized areas of dentistry. Includes weekly seminars as an integral part of the learning experience.

DEN 114—HEALTH OFFICE COMMUNICATIONS

3 Credits
Health auxiliary personnel must have communication skills to effectively function in their chosen field. Communication is the key to successful business relationships. Health care workers must be able to productively communicate with patients, co-workers, employers, and various business associates if they are to meet the demands of today's dental market.

DEN 281-293—SPECIAL TOPICS IN DENTAL ASSISTANT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

FOOD SERVICE TECHNOLOGY

The Food Service Technology program prepares students for careers in regional or national food establishments or in health care facilities and institutions. Students are trained to select, purchase, prepare, and produce food in quantity. Included are courses in volume purchasing and preparation of foods, supervision of food service operations, sanitation and safety, operation and scheduling of food production and proper service techniques, and marketing and merchandising of the establishment product. Students may elect courses in nutrition, cost controls, beverage management, bakery products, and catering.

A one-year program, requiring 36 credits, leads to a Technical Certificate. The program is offered in Richmond.

TECHNICAL CERTIFICATE PROGRAM

Technical Courses (24 Credits)

Prefix	No.	Title	Semester Credits
FST	101	Introduction to Food Preparation	3
FST	102	Food Service Equipment Operations	3
FST	103	Food Service Sanitation and Safety	3
FST	104	Food Production Methods and Procedures	3
FST	105	Quality Service Standards	3
FST	106	Application of Food Service Production I	3
FST	107	Fundamentals of the Catering Business	3
FST	108	Application of Food Service Production II	3

General Education Courses (9 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
SOC	101	Human Relations	3
REL	111	Technical Mathematics I	3

Regional Electives (3 Credits) 3

Total Credits 36

FOOD SERVICE TECHNOLOGY COURSE DESCRIPTIONS

FST 101—INTRODUCTION TO FOOD PREPARATION

3 Credits
An introduction to preparation principles, nutrition, and menu writing. Emphasis is on basic food preparation techniques, food interactions during cooking and storage, and evaluation of finished products.

FST 102—FOOD SERVICE EQUIPMENT AND OPERATIONS

3 Credits
An in-depth study of food service equipment including cleaning, preventative maintenance, specifications, and legal requirements, with emphasis on usage.

FST 103—FOOD SERVICE SANITATION AND SAFETY

3 Credits
Examines sanitation procedures for the elimination of food borne illnesses and food contamination in food service facilities. Stresses accident prevention through proper safety methods.

FST 104—FOOD PRODUCTION METHODS AND PROCEDURES

3 Credits
Application of food production methods and procedures with emphasis on soups, sauces, and gravies.

FST 105—QUALITY SERVICE STANDARDS

3 Credits
Skill development in the techniques of serving, clearing and cashiering in dining operations.

FST 106—APPLICATION OF FOOD SERVICE PRODUCTION I

3 Credits
Applications of the principles of pantry production, baking, vegetable and fruit preparation, pastries, and breakfast cookery.

FST 107—FUNDAMENTALS OF THE CATERING BUSINESS

3 Credits
An introduction to the fundamentals of owning and operating a small catering business to include personal, legal, and operational requirements.

FST 108—APPLICATION OF FOOD SERVICE PRODUCTION II

3 Credits
Application of production methods and procedures for meat, seafood, poultry, dairy products, and hot hors d'oeuvres.

FST 109—COMPUTER FOODSERVICE SPREADSHEETS

3 Credits
An introduction to Microcomputers with specific Foodservice applications. Basic Procedures for Foodservice spreadsheet applications involving analysis and reporting using Lotus 1-2-3 or compatible software.

FST 110—PROFESSIONAL DINING ROOM SERVICE

3 Credits
This course provides students with skills in French and Russian service techniques. Included are table-side cooking, wine and beverage service.

FST 281-293—SPECIAL TOPICS IN FOOD SERVICE TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

HEALTH CARE ADMINISTRATION TECHNOLOGY

The Health Care Administration Technology program is designed for individuals who want to become administrators in long-term care health facilities or for those who want to upgrade their skills as nursing home administrators. Individuals who have completed the 200-hour nursing home administrator's course and who have been working in the field can enter the program at an advanced level.

Through the program, students will develop an understanding of the rules and regulations governing nursing homes and gain knowledge about the aging process and the needs of older adults. They will also develop an understanding of the different disciplines involved and administrative skills necessary to head a long-term care facility.

The Associate in Applied Science degree program requires completion of 61 credits and prepares the student to take the licensing exam.

The program is available in Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (52 Credits)

Prefix	No.	Title	Semester Credits
HCA	101	Introduction to Long-Term Care	3
HCA	102	Interdisciplinary Team Management	3
HCA	201	Health and Aging	3
HCA	202	Long-Term Care Internship I	5
HCA	203	Long-Term Care Internship II	5
HCA	204	Long-Term Care Internship III	5
HCA	205	Long-Term Care Internship IV	5
HCA	206	Long-Term Care Internship Seminar I	1
HCA	207	Long-Term Care Internship Seminar II	1
HCA	208	Issues of Long-Term Care	3
HST	106	Physiology of Aging	3
HST	108	Psychology of Aging	3
BUS	101	Introduction to Business	3
BUS	202	Human Resources Management	3
MKT	101	Principles of Marketing	3
IST	215	Purchasing and Inventory Control	3

General Education Courses (9 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	102	English Composition II	3
MAT	107	Math of Finance	3
		Total Credits	61

HEALTH CARE ADMINISTRATION TECHNOLOGY COURSE DESCRIPTIONS

HCA 101—INTRODUCTION TO LONG TERM CARE

3 Credits
Explores the history of health care provided outside the home, and offers an overview of long-term health care facilities. Includes rules and regulations of nursing homes, resident rights, legislation, and physical plant requirements.

HCA 102—INTERDISCIPLINARY TEAM MANAGEMENT

3 Credits
Explores principles and relationships of the interdisciplinary team, the various departments which may compose the team, and the services which the department provides.

HCA 201—HEALTH AND AGING

3 Credits
A holistic overview of the physical, psychological and social needs of individuals who live in extended care facilities. Examines effective treatment modalities to meet the residents' various needs.

HCA 202—LONG TERM CARE INTERNSHIP I

5 Credits
Provides practical "hands-on" experience in a long-term care facility. The internship will serve as a basis for acquiring the knowledge, skills and attitudes one needs to function as an effective administrator.

HCA 203—LONG TERM CARE INTERNSHIP II

5 Credits
Continuation of Long Term Care Internship I.

HCA 204—LONG TERM CARE INTERNSHIP III

5 Credits
Continuation of Long Term Care Internship I and II.

HCA 205—LONG TERM CARE INTERNSHIP IV

5 Credits
Continuation of Long Term Care Internship I, II and III.

HCA 206—LONG TERM CARE SEMINAR I

1 Credit
Taken concurrently with Long Term Care Internship I and II; allows students to explore nursing home issues.

HCA 207—LONG TERM CARE SEMINAR II

1 Credit
Taken with Long Term Care Internship III and IV, the seminar provides students the opportunities to discuss internship experiences and other relevant nursing home topics.

HCA 208—ISSUES OF LONG TERM CARE

3 Credits
An overview of various issues to familiarize students with responsibilities of nursing home administrators. Management styles, models, quality circles and personal improvement are covered.

HCA 281-293—SPECIAL TOPICS IN HEALTH CARE ADMINISTRATION TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

HUMAN SERVICES TECHNOLOGY

The Human Services program offers students the opportunity to become Human Services generalists and/or to concentrate in the areas of Substance Abuse or Gerontology.

As a Human Services professional, one reaches out to individuals, to families, and to communities. The Human Services program provides the broad understanding to help others meet their psychological, social, and environmental needs. The Human Services Generalist may find employment in a variety of settings such as community centers, group homes, substance abuse centers, and nursing homes. All enrolled in the program take a core of Human Services courses.

Those who study Human Services with a focus on Substance Abuse may find positions in substance abuse centers (residential, detox, hospitals) as counselors or residents-in-training. (The program is certified by Indiana Counselors Association on Alcohol Abuse, ICAADA.) Those who focus on Gerontology may find jobs in adult day care centers, senior citizens centers and extended care facilities.

Program objectives include training the entry-level worker, providing education and training to upgrade the skills and knowledge of those currently employed, and providing development and enhancement. Throughout the program, students examine their values and attitudes which reflect upon their interactions with others.

The Associate in Applied Science Degree requires 64 credits. The program is offered in Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (34 Credits)

Prefix	No.	Title	Semester Credits
HST	101	Introduction to Human Services	3
HST	102	Helping Relationship Techniques	3
HST	103	Interviewing and Assessment	3
HST	201	Internship I	5
HST	202	Internship II	5
HST	203	Internship Seminar I	3
HST	204	Internship Seminar II	3
HST	205	Behavioral/Reality Techniques	3
HST	206	Group Process and Skills	3
HST	207	Program Planning/Policy	3

General Education Courses (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
SOC	102	Introduction to Psychology	3
SOC	104	Introduction to Sociology	3
SOC	105	Introduction to Political Science	3
MAT	107	Math of Finance	3

Regional Electives (12 credits) 12

Total Credits 64

HUMAN SERVICES TECHNOLOGY COURSE DESCRIPTIONS

HST 101—INTRODUCTION TO HUMAN SERVICES

3 Credits
Exploration of the history of human services, career opportunities and roles of the human service worker. Focuses on target populations and community agencies designed to meet the needs of various populations.

HST 102—HELPING RELATIONSHIPS TECHNIQUES

3 Credits
Provides opportunities to increase effectiveness in helping people. Examines the helping process in terms of skills, helping stages, and issues involved in a helping relationship and introduces major theories of helping.

HST 103—INTERVIEWING AND ASSESSMENT

3 Credits
Develops skills in interviewing and provides a base for students to build personal styles. Introduces a variety of assessment approaches and treatment planning. Case studies and recording exercises are utilized.

HST 104—CRISIS INTERVENTION

3 Credits
This course is designed as a beginning training unit for people who anticipate or are presently working with people in crisis situations.

HST 105—CRIMINAL JUSTICE SYSTEMS

3 Credits
This course introduces the study of crime and criminals and how society is affected.

HST 106—PHYSIOLOGY OF AGING

3 Credits
This course will focus on the physical changes and common pathologies associated with the aging process. It also will focus on the psychological and social implications of such changes for human behavior. Throughout the course, there will be a focus on health promotion and disease prevention during the later years.

HST 107—HUMAN SERVICES TOPICAL SEMINAR

3 Credits
Discusses topics of current interest in human services. Attention is given to special interest projects for students in Human Services. Field trips, guest speakers, audio-visual activities, and seminars may be utilized.

HST 108—PSYCHOLOGY OF AGING

3 Credits
Covers the major behavioral changes in adulthood and aging. Students explore their own feelings about aging, as well as societal attitudes.

HST 109—FAMILIES IN AMERICAN CULTURE

3 Credits
The impact of change on the role and function of the modern family, the nature of the socialization process, and socioeconomic, cultural and ethnic factors that nurture or inhibit the family's capacity to function are areas of study included in this course.

HST 111—L.T.C. ACTIVITY DIRECTOR

3 Credits
Explores the philosophy and investigates the development of therapeutic activity programs for residents living in nursing homes. It focuses on offering activities which will meet an individual's physical, social, emotional needs.

HST 112—RECREATION FOR SPECIAL POPULATIONS

3 Credits
Studies the nature and etiology of impairments including developmental disabilities, mental illness, physical disabilities and geriatrics, and their potential impact upon an individual's ability to participate in recreational activities. Techniques needed to conduct a recreation program which allows successful participation by an individual with a disability will be explored.

HST 113—PROBLEMS OF SUBSTANCE ABUSE IN SOCIETY

3 Credits
Provides basic information about alcohol and drugs, as well as the various laws which pertain to them. It also explores current attitudes and practices which pertain to alcohol and drug use, misuses, and dependence.

HST 114—SOCIAL SERVICES IN LONG-TERM CARE

3 Credits
A specialized course which gives practical and useful information about aging and institutionalization. It focuses on the role of Social Services with the long-term care facility.

HST 115—APPLIED BEHAVIORAL PSYCHOLOGY

3 Credits
A study of unique capacities and personal strengths of self and others. Emphasis is on discovering, clarifying, and affirming individual potential for living more fully. Students discuss the complex nature of human development, human behavior and related social problems.

HST 116—INTRODUCTION TO MENTAL RETARDATION/DEVELOPMENT DISABILITIES

3 Credits
This course provides the participant with background knowledge of the field of mental retardation/developmental disabilities and issues pertinent to the field.

HST 117—INTRODUCTION TO RESIDENTIAL TREATMENT

3 Credits
Introduces information, skills, and attitudes necessary to become an effective worker in residential treatment. Explores the therapeutic "milieu", basic developmental needs, planning and use of activities, and issues related to the team approach. Discusses and demonstrates observation and recording of behavior.

HST 201—INTERNSHIP I

5 Credits
A field work experience in social, educational, law enforcement (corrections) or other community service organizations. The student will be supervised by a practicum site professional and a college faculty member. Fourteen-sixteen hours of work experience each week.

HST 202—INTERNSHIP II

5 Credits
Continuation of Internship I. Location of this practicum experience will be determined cooperatively by the student and the Human Services Department. Fourteen-sixteen hours of work experience each week.

HST 203—INTERNSHIP SEMINAR I

3 Credits
Discussion and analysis in small groups of the human services practicum experience. There will be special learning objectives related to the kind of work the student will do in an organization after completion of the program.

HST 204—INTERNSHIP SEMINAR II

3 Credits
Continuation of Internship Seminar I with different learning objectives. These objectives will be related to the work the student will do after completion of the program.

HST 205—BEHAVIORAL/REALITY TECHNIQUES

3 Credits
Focuses on theories of behavioral and reality approaches. Develops understanding of terms and practical applications of the behavioral and reality approaches used in working with people.

HST 206—GROUP PROCESS AND SKILLS

3 Credits
A study of group dynamics, issues, and behavior. Includes group functioning and leadership, guidelines on working effectively with a co-leader, and practical ways of evaluating the group process.

HST 207—PROGRAM PLANNING/SOCIAL POLICY ISSUES

3 Credits
Deals with the components of administration of human service agencies. Addresses practitioner skills needed to be an administrator or supervisor. Discusses social policy issues and impact on human services.

HST 208—TREATMENT MODELS OF SUBSTANCE ABUSE

3 Credits
Describes the various treatment models used with chemically dependent clients.

HST 209—COUNSELING ISSUES

3 Credits
Explores practice strategies for the worker who counsels chemically dependent clients.

HST 210—CODEPENDENCY

3 Credits
This course presents the definition of codependency and the issues related to it. Students learn skills and techniques to confront codependent behavior.

HST 281-293—SPECIAL TOPICS IN HUMAN SERVICES TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

MEDICAL ASSISTANT

The graduate of the Medical Assistant Program is a professional multi-skilled person dedicated to assisting in patient care management primarily in a physician's office. The practitioner performs administrative and clinical duties and may manage emergency situations, facilities, and/or personnel. Competence in the field also requires that a Medical Assistant display professionalism, communicate effectively, and provide instruction to patients. A required externship under the direct supervision of a physician provides valuable on-the-job experience.

Graduates of the Medical Assistant Program will be prepared to take the Certification Examination of the American Association of Medical Assistants (AAMA) and the American Medical Association (AMA).

The two-year Associate in Applied Science program requires 65 credits for completion. Technical Certificates are also available. Programs are offered in Columbus, Evansville, Fort Wayne, Indianapolis, Kokomo, Lafayette, Madison, Muncie, Sellersburg, South Bend, Terre Haute, and Valparaiso.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (37 Credits)

Prefix	No.	Title	Semester Credits
MEA	102	First Aid and CPR	2
MEA	104	Medical Assisting-Administrative	3
MEA	111	Medical Typing and Transcription	3
MEA	112	Medical Assisting-Clinical	4
MEA	113	Pharmacology	3
MEA	114	Medical Assisting Laboratory Techniques	3
MEA	115	Medical Insurance	2
MEA	120	Medical Assisting-Clinical Externship	3
MEA	121	Medical Assisting-Administrative Externship	3
MEA	201	Medical Word Processing-Transcription	2
MEA	202	Medical Assisting-Advanced Clinical	4
MEA	203	Disease Conditions	3
MEA	204	Medical Office Management	2

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	107	Math of Finance	3
SOC	102	Introduction to Psychology	3
SCI	113	Anatomy and Physiology I	3
SCI	115	Anatomy and Physiology II	3

Related Education (7 Credits)

INF	101	Introduction to Microcomputers	3
MEA	101	Medical Terminology	3
MEA	103	Medical Law and Ethics	1

Regional Electives (3 Credits) 3

Total Credits 65

MEDICAL ASSISTANT COURSE DESCRIPTIONS

MEA 101—MEDICAL TERMINOLOGY

3 Credits
Addresses basic terminology required of the allied health professional. Greek and Latin prefixes are presented, as well as suffixes, word roots, and combining forms. Emphasis is on forming a solid foundation for a medical vocabulary including meaning, spelling, and pronunciation. Medical abbreviations, signs, and symbols are included.

MEA 102—FIRST AID AND CPR

2 Credits
Provides students with information necessary to recognize emergency situations, know the proper course of action with different types of emergencies, and apply appropriate first aid, including CPR.

MEA 103—MEDICAL LAW AND ETHICS

1 Credit
Presents ethics of medicine and medical practice, as well as legal requirements and implications for allied health professions.

MEA 104—MEDICAL ASSISTING—ADMINISTRATIVE

3 Credits
This course provides a basic understanding of the administrative duties and responsibilities pertinent to medical offices. It also develops communication skills specifically directed toward a medical office and the role of the professional Medical Assistant as a member of the health care team. It includes instruction in medical correspondence and records, case histories of patients, filing, financial administration, telephone procedures, appointment scheduling, receptionist duties, processing mail, pegboard accounting, and care of facilities and equipment. It also includes development of desirable personality traits, interpersonal relationships and attitudes within the medical office.

MEA 111—MEDICAL TYPING AND TRANSCRIPTION

3 Credits
Focuses on improving typewriting ability in the medical field, including transcription with emphasis on production, speed and accuracy. Course includes formatting, typing, and transcription of articles, medical reports, case histories, and correspondence using medical terminology.

MEA 112—MEDICAL ASSISTING—CLINICAL

4 Credits
Provides students the opportunity to become familiar with clinical duties and to gain the skills needed to perform them. Includes: vital signs, asepsis, sterilization, medications, ECGs, X-ray, nutrition, physical therapy, and other technical skills needed to assist the physician.

MEA 113—PHARMACOLOGY

3 Credits
The most common medications in current use are discussed according to body systems with emphasis on classifications, uses, routes of administration, dosages, interactions, incompatibilities, and side effects. Also addressed are special precautions, legal aspects, and patient education.

MEA 114—MEDICAL ASSISTING LABORATORY TECHNIQUES

3 Credits
Prepares students to perform various basic laboratory procedures to include preparation of patients, collecting and preparing appropriate specimens, familiarization with purposes and expected norms of laboratory test results. Course also includes current safety and quality control standards.

MEA 115—MEDICAL INSURANCE

2 Credits
An overview of medical insurance programs with skills developed in handling insurance forms, CPT and ICD-9-CM Coding, and reports as applied to the medical office.

MEA 120—MEDICAL ASSISTING CLINICAL EXTERNSHIP

3 Credits
Provides the opportunity to discuss and perform clinical procedures under supervision, with learning experiences obtained in selected physicians' offices, clinics, or hospitals.

MEA 121—MEDICAL ASSISTING ADMINISTRATIVE EXTERNSHIP

3 Credits
Course provides opportunities to observe, perform, and discuss various administrative competencies under supervision, with learning experiences obtained in selected physicians' offices, clinics, or hospitals.

MEA 201—MEDICAL WORD PROCESSING/ TRANSCRIPTION

2 Credits
Advances skills and knowledge of medical dictation, machine transcription, and use of word processing. Includes typing medical reports, terminology, and correspondence.

MEA 202—MEDICAL ASSISTING—ADVANCED CLINICAL

4 Credits
Advances the knowledge and skills enabling the student to assist in clinical management in the medical and surgical specialities. Addresses health services in the community which are directed toward prevention of disease and maintenance and restoration of health.

MEA 203—DISEASE CONDITIONS

3 Credits
Presents the basic concepts of diseases, their courses and functional disturbances as they relate to body systems. Includes the precipitating risk factors and appropriate methods of patient education regarding various disease processes.

MEA 204—MEDICAL OFFICE MANAGEMENT

2 Credits
An in-depth study of various influences on office functions providing a background for organization and management of a physician's office. Includes government and professional sources for consultation.

MEA 211—ECG INTERPRETATION

3 Credits
Covers basic cardiovascular anatomy and physiology; basic electrophysiology; ECG techniques to define, identify and analyze ECG measurements; ECG holter and stress testing instrumentation; nomenclature and derivations of ECG leads.

MEA 212—PHLEBOTOMY

3 Credits
Presents the principles and practices of laboratory specimen collection and processing. Also covers medical terminology, infection control, patient identification, anatomy and physiology, anticoagulants, blood collection, specimen processing, and interpersonal skills.

MEA 213—ADVANCED INSURANCE CODING

3 Credits
Introduces the medical office administrator to codes necessary to bill insurance claims and provides experience in coding claim forms using the correct combination of codes to maximize reimbursement.

MEA 214—ADVANCED FIRST AID AND CPR

3 Credits
Provides students with information necessary to recognize emergency situations, know the proper course of action with different types of emergencies and apply appropriate first aid. Handling of victims of hazardous materials accidents will be addressed. CPR including one and two rescuer adult, infant, and child resuscitation will be taught.

MEA 215—ADVANCED MEDICAL TERMINOLOGY

3 Credits
Includes more detailed and advanced study of the derivatives of medical terms, symbols, and signs. Presents an in-depth study of the correlation between medical vocabulary and the application of those terms to the anatomy and physiology of the body, related diseases, conditions, and treatment.

MEA 216—NUTRITION

2 Credits
Presents the importance of a balanced diet; methods of evaluating a diet; the basic four food groups; the functions, requirements and food sources of fats, proteins, carbohydrates, vitamins, and minerals; and the deficiency diseases. Introduces meal planning, nutrition for various age groups, religious and nationality food habits, and diet therapy. Explains special diets for diabetes, disease of the GI tract, urinary tract, blood, cardiovascular system, obesity, cancer, allergy, and pregnancy.

MEA 217—GERONTOLOGY

3 Credits
Presents a multidisciplinary study of the sociological, psychological, and physiological aspects of aging. Included will be patient education and the impact all facets of aging have on the total person.

MEA 221—SEMINAR I

1 Credit
Discusses topics of current interest in the medical assisting profession. Attention is given to special interest projects for students in the Medical Assistant program. Field trips, guest speakers, audio-visual activities, and seminars may be utilized.

MEA 222—SEMINAR II

2 Credits
Discusses topics of current interest in the medical assisting profession. Attention is given to special interest projects for students in the Medical Assistant program. Field trips, guest speakers, audio-visual activities, and seminars may be utilized.

MEA 223—SEMINAR III

3 Credits
Discusses topics of current interest in the medical assisting profession. Attention is given to special interest projects for students in the Medical Assistant program. Field trips, guest speakers, audio-visual activities, and seminars may be utilized.

MEA 281-293—SPECIAL TOPICS IN MEDICAL ASSISTANT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

MEA 299—COMPREHENSIVE CERTIFICATION REVIEW

3 Credits
This course is designed to review fundamentals and principles of medical assisting, thereby preparing the student to sit for the certification examination upon graduation from the program. Administrative, clinical, and general information is covered. Testing procedures are addressed.

MEDICAL LABORATORY TECHNICIAN

The Medical Laboratory Technician program is designed to prepare graduates to work in clinics, physicians' offices, hospitals and research laboratories as medical laboratory technicians. Medical laboratory technicians perform laboratory procedures, define and solve associated problems, and use quality control techniques to aid in the diagnosis, treatment, and monitoring of patients. Courses in bacteriology, parasitology, chemistry, hematology, immunology, anatomy, physiology, and immunohematology provide both theory and practical applications.

The two-year program requires completion of 69 credits. Programs are offered in South Bend and Terre Haute.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (47 Credits)

Prefix	No.	Title	Semester Credits
MLT	101	Fundamentals of Laboratory Techniques	3
MLT	102	Routine Analysis Techniques	3
MLT	201	Immunology Techniques	3
MLT	202	Immunohematology Techniques	3
MLT	203	Instrumentation	2
MLT	204	Microbiology Techniques	4
MLT	205	Hematology Techniques I	3
MLT	206	Hematology Techniques II	3
MLT	207	Chemistry Techniques I	3
MLT	208	Chemistry Techniques II	3
MLT	209	Routine Analysis Applications	1
MLT	210	Hematology Applications	3
MLT	211	Microbiology Applications	4
MLT	212	Immunology Applications	1
MLT	213	Immunohematology Applications	3
MLT	214	Chemistry Applications	4
MLT	215	Parasitology and Mycology Techniques	1

General Education Courses (16 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
SOC	101	Human Relations	3
MAT	101	Algebra I	3
MEA	103	Medical Law and Ethics	1
SCI	107	Chemistry	3
SCI	113	Anatomy & Physiology I	3

Regional Electives (6 Credits) 6

Total Credits 69

MEDICAL LABORATORY TECHNICIAN COURSE DESCRIPTIONS

MLT 101—FUNDAMENTALS OF LABORATORY TECHNIQUES

3 Credits
Introduces elementary skills required in the medical laboratory. Subject matter includes: laboratory math, quality control, pipetting skills, veinipuncture techniques and microscope skills.

MLT 102—ROUTINE ANALYSIS TECHNIQUES

3 Credits
Principles, practices and clinical laboratory techniques associated with the routine analysis of urine and other body fluids.

MLT 201—IMMUNOLOGY TECHNIQUES

3 Credits
Designed to provide the student with a basic understanding of the principles of the human immunologic system and experience routine serologic testing.

MLT 202—IMMUNOHEMATOLOGY TECHNIQUES

3 Credits
Instruction in the practice, principles, and procedures used for blood banking in the clinical laboratory.

MLT 203—INSTRUMENTATION

2 Credits
Includes instrumentation theory and practices as applied to electronic equipment and automated systems in the medical laboratory.

MLT 204—MICROBIOLOGY TECHNIQUES

4 Credits
Principles of bacteriology including gram negative and positive bacilli and cocci, fastidious organisms and an overview of anaerobic and acid-fast bacteria. Basic laboratory techniques in clinical bacteriology.

MLT 205—HEMATOLOGY TECHNIQUES I

3 Credits
Theory of blood formation and function and routine hematologic procedures, with emphasis on differentiation of normal and commonly encountered abnormal blood cells. Includes basic theory of hemostasis and associated routine coagulation procedures and clinicopathologic correlations.

MLT 206—HEMATOLOGY TECHNIQUES II

3 Credits
Continues the study of principles and procedures in hematology and hemostasis. Introduces procedures which lie outside those routinely performed. Continues cell differentiation, with emphasis on early and less commonly encountered abnormal cells, with associated special stains. Includes clinicopathologic correlations.

MLT 207—CHEMISTRY TECHNIQUES I

3 Credits
Principles, procedures and clinicopathologic correlations in routine chemical analysis of the blood and other body fluids. Provides laboratory experiences in basic methods, selected to develop routine analytical abilities and to promote the ability to recognize sources of error.

MLT 208—CHEMISTRY TECHNIQUES II

3 Credits
Continues the study of principles, procedures and clinicopathologic correlations in the chemical analysis of blood and other body fluids. Introduces procedures which lie outside those routinely performed in the clinical chemistry laboratory, including clinicopathologic correlations.

MLT 209—ROUTINE ANALYSIS APPLICATIONS

1 Credit
Clinical applications of routine urine analysis in the hospital laboratory including physical, chemical and microscopic examination of urine.

MLT 210—HEMATOLOGY APPLICATIONS

3 Credits
Knowledge and skill development pertaining to the principles and techniques of hematology in the hospital laboratory.

MLT 211—MICROBIOLOGY APPLICATIONS

4 Credits
A study of the applications and clinical practices of microbiology found in the hospital laboratory.

MLT 212—IMMUNOLOGY APPLICATIONS

1 Credit
Study and practice in the clinical application of serology in the hospital laboratory.

MLT 213—IMMUNOHEMATOLOGY APPLICATIONS

3 Credits
Applications of principles and procedures used in blood banking in the hospital laboratory.

MLT 214—CHEMISTRY APPLICATIONS

4 Credits
Designed to study and practice the analytical aspects of clinical chemistry in the hospital laboratory.

MLT 215—PARASITOLOGY AND MYCOLOGY TECHNIQUES

1 Credit
Examines the isolation, identification, life cycles and disease processes of pathogenic fungi and parasites.

MLT 216—ELEMENTARY ORGANIC AND BIOCHEMISTRY

3 Credits
The chemistry of carbon-containing compounds and the biochemistry of lipids, carbohydrates, proteins, nucleic acids and enzymes. Includes related laboratory procedures.

MLT 217—ADVANCED CHEMISTRY TECHNIQUES

1 Credit
Principles and techniques of chemistry procedures outside of routine clinical chemistry testing, such as toxicology, endocrinology, and inborn errors of metabolism.

MLT 218—CLINICAL PATHOLOGY

3 Credits
Examines various disease conditions, diagnosis, etiologies, clinical symptoms and related laboratory findings. Includes anemias, leukemias, autoimmune and immunodeficiency disorders.

MLT 281-293—SPECIAL TOPICS IN MEDICAL LABORATORY TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

MENTAL HEALTH REHABILITATION TECHNOLOGY

The Mental Health Rehabilitation Technology Program prepares paraprofessionals with the skills necessary for employment in the mental health field. The program develops technicians in activity therapy, work therapy, supportive therapy, and educational and recreational programs. The curriculum offers specialized and technical courses in physical and behavioral client-treatment techniques, management of client living units, recreational and creative activities, client assessment and documentation.

The two-year program, requiring 73 credits, leads to the Associate in Applied Science Degree. Technical Certificates are also available in specialty areas. The program is offered in Fort Wayne and Muncie.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (56 Credits)

Prefix	No.	Title	Semester Credits
MHR	101	Physical Care	3
MHR	102	Behavior Management	3
MHR	103	Physical Systems	3
MHR	104	Clinical I	4
MHR	105	Human Growth and Development	3
MHR	106	Evaluation and Assessment	3
MHR	107	Special Populations Needs and Activities	3
MHR	108	Clinical II	4
MHR	201	Applied Psychology	4
MHR	202	Abnormal Psychology	4
MHR	203	Clinical III	4
MHR	204	Issues and Resources in Mental Health	3
MHR	205	Management and Supervision	3
MHR	206	Legal Aspects	3
MHR	207	Aging Process	3
MHR	208	Chemical Dependency	3
MEA	102	First Aid and CPR	3

General Education Requirements (12 Credits)

Prefix	No.	Title	
MAT	101	Algebra I	3
ENG	101	English Composition	3
SOC	101	Human Relations	3
MEA	113	Pharamacology	3

Regional Electives (5 Credits) 5

Total Semester Credits 73

MENTAL HEALTH REHABILITATION TECHNOLOGY COURSE DESCRIPTIONS

MHR 101—PHYSICAL CARE

3 Credits
Designed to provide entry level skills in assessing the physical and emotional status of clients. Skill development in identifying major symptoms, and learning therapeutic interventions. Includes recording of vital signs and terminology used in the mental health field.

MHR 102—BEHAVIOR MANAGEMENT

3 Credits
Introduction to principles and applications of behavior modification. Identifying target behaviors and designing behavioral programs to affect change. Issues of ethics, mental retardation, positive reinforcement, and program evaluation are emphasized.

MHR 103—PHYSICAL SYSTEMS

3 Credits
Deals with the physical care of clients within a unit. Surveys muscular patterns, body systems, seizures, and first aid.

MHR 104—CLINICAL I

4 Credits
Experience is gained through internship at a mental health agency. Includes assessment, establishing therapeutic relationships, knowledge of community resources, and learning to function as part of a mental health team. Choice of agency is determined jointly by the student, agency, and clinical supervisor.

MHR 105—HUMAN GROWTH AND DEVELOPMENT

3 Credits
Introduces cognitive, social and psychological theories of human development from the prenatal period through the adolescent years. Examines human development from the adolescent years through later adulthood. Includes adjustment to the roles of adulthood, the aging process, and death and dying.

MHR 106—EVALUATION AND ASSESSMENT

3 Credits
How to observe, assess, and document behavior in a professional manner. Skills are obtained in conducting interviews, writing progress notes, and completing intakes. Emphasis is on learning to be accurate, objective, and professional with any assessment of human behavior.

MHR 107—SPECIAL POPULATIONS/ NEEDS AND ACTIVITIES

3 Credits
Considers recreation as a vital form of therapy. Skills are acquired in identifying client needs and limitations. Focus is on providing comfortable, therapeutic activities to promote client interaction.

MHR 108—CLINICAL II

4 Credits
This course allows students to build upon skills and experience gained in Clinical I.

MHR 201—APPLIED PSYCHOLOGY

4 Credits
A survey of humanistic, behavioristic and psychoanalytic theories of personality as they relate to dealing effectively with the adjustment demands of everyday life. Includes the dynamics of stress and coping, interpersonal relationships, and approaches to personal growth.

MHR 202—ABNORMAL PSYCHOLOGY

4 Credits
A framework for understanding maladaptive behavior including common misconceptions and accepted definitions. Course details the clinical pictures, causal factors and treatment and outcomes of maladaptive patterns. Areas of assessment, therapy and prevention are also addressed.

MHR 203—CLINICAL III

4 Credits
Offers supervised clinical experience with emphasis on client interaction and assessment.

MHR 204—ISSUES AND RESOURCES IN MENTAL HEALTH

3 Credits
Focuses on current issues and resources that impact upon client treatment. Topics such as client rights, advocacy and accurate diagnosis/treatment are explored. Legislative issues affecting both the mentally retarded and the mentally ill client will be addressed.

MHR 205—MANAGEMENT AND SUPERVISION

3 Credits
Needs and methods of providing service to the client in a residential facility. Skills obtained in identifying spe-

cific client needs, as well as managing activities of daily living, therapeutic relationships, and role clarification for the mental health worker as part of a team.

MHR 206—LEGAL ASPECTS

3 Credits
Application of the least restrictive alternative and Public Law/58 to resident programming including JCAH accreditation requirements. Outlines treatment procedures available from policy B-11, including extinction, over correction, and restrictive techniques and the legal and ethical considerations of each.

MHR 207—AGING PROCESS

3 Credits
Develops understanding of the physical and psychological changes that occur with aging. Adaptations of nursing techniques, treatment approaches and the environment to meet these changing needs are explored.

MHR 208—CHEMICAL DEPENDENCY

3 Credits
Offers an approach to the assessment and treatment of alcohol and drug addiction, with emphasis on treatment. Attention is given also to theories of alcoholism and drug abuse as a disease.

MHR 281-293—SPECIAL TOPICS IN MENTAL HEALTH REHABILITATION TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

ASSOCIATE OF SCIENCE IN NURSING

The Associate of Science in Nursing program is available to the student with no previous nursing education and provides the LPN mobility to continue education to the associate degree level. Graduates of the ASN program are eligible to write the NCLEX-RN to become registered nurses. The program is designed to accommodate students who are entering nursing for the first time as well as LPNs seeking educational mobility. Those interested in the ASN program are encouraged to contact the nearest region offering a program for information concerning course and program offerings.

Under articulation agreements, students complete technical courses at Ivy Tech and general education courses at a four-year institution in the region. Program locations and the cooperating institutions are: South Bend/Indiana University-South Bend; Lafayette/St. Joseph's College at Rensselaer; Richmond/Indiana University-East; and Evansville/University of Southern Indiana.

ASSOCIATE IN SCIENCE DEGREE PROGRAM (TRACK I)

Technical Courses (38 Credits)

Prefix	No.	Title	Semester Credits
NUR	101	Fundamental Nursing Concepts	4
NUR	102	Fundamental Nursing Concepts Practicum	4
NUR	103	Life Cycle Nursing I	4
NUR	104	Life Cycle Nursing I Practicum	4
NUR	201	Life Cycle Nursing II	5
NUR	202	Life Cycle Nursing II Practicum	5
NUR	203	Life Cycle Nursing III	5
NUR	204	Life Cycle Nursing III Practicum	5
NUR	205	Issues in Nursing	2

General Education Courses

Courses include Chemistry, Anatomy and Physiology, Microbiology, Psychology, Sociology, Lifespan Development, and English (Requires Approval of Program Supervisor)	28-32
Total Credits	66-70

COMPLETION OPTION PROGRAM, LPNs ONLY

Technical Courses (38 Credits)

Prefix	No.	Title	Semester Credits
NUR	105	NLN Mobility Profile I, Book 1	5
NUR	106	Transition to Associate Degree Nursing	5
NUR	107	Transition to Associate Degree Nursing Practicum	3
NUR	199	Comprehensive Competency Skill Review	3
NUR	201	Life Cycle Nursing II	5
NUR	202	Life Cycle Nursing II Practicum	5
NUR	203	Life Cycle Nursing III	5
NUR	204	Life Cycle Nursing III Practicum	5
NUR	205	Issues in Nursing	2

General Education Courses

Required courses include Chemistry, Anatomy and Physiology, Microbiology, Psychology, Sociology, Lifespan Development, and English	28-32
Total Credits	66-70

Regions offering the Completion Program *only* will utilize the following format. The Completion Program is only available to LPNs.

COMPLETION OPTION PROGRAM, LPNs ONLY (TRACK II)

Technical Courses (38 Credits)

Prefix	No.	Title	Semester Credits
NUR	105	NLN Mobility Profile I, Book 1	5
NUR	199	Comprehensive Competency Skill Review	3
NUR	205	Issues in Nursing	2
NUR	211	Life Cycle Nursing I	5
NUR	212	Life Cycle Nursing II	5
NUR	213	Life Cycle Nursing Practicum	5
NUR	221	Life Cycle Nursing III	4
NUR	222	Life Cycle Nursing IV	4
NUR	223	Life Cycle Nursing Practicum	5

General Education Courses

Required courses include Chemistry, Anatomy and Physiology, Microbiology, Psychology, Sociology, Lifespan Development and English	28-32
Total Credits	66-70

ASSOCIATE DEGREE NURSING COURSE DESCRIPTIONS

NUR 101—FUNDAMENTAL NURSING CONCEPTS (TRACK I)

4 Credits
Introduces the role of the associate degree nurse, and the facts, concepts, and principles underlying the nursing process. Emphasizes physical and psychosocial assessment. Identifies the components of the program philosophy, conceptual framework, and terminal objectives.

NUR 102—FUNDAMENTAL NURSING CONCEPTS PRACTICUM (TRACK I)

4 Credits
Provides campus and clinical laboratory experience to utilize the role of the associate degree nursing student employing the nursing process. Simulated/actual client care provides opportunity to develop assessment skills and to initiate beginning level of analyzing, planning, implementing and evaluating therapeutic measures.

NUR 103—LIFE CYCLE NURSING I (TRACK I)

4 Credits
Identifies the role of the associate degree nurse in assisting people in meeting their needs during the childbearing process through adolescence. The nursing process is utilized to comprehend the assessment, analysis, planning, implementation, and evaluation of therapeutic measures that promote, maintain, and/or restore health.

NUR 104—LIFE CYCLE NURSING I PRACTICUM (TRACK I)

4 Credits
Provides campus and clinical laboratory experience to function in the role of the associate degree nursing student in providing care to clients during the childbearing process through adolescence. The nursing process is employed to promote, maintain, and/or restore health while providing quality nursing care.

NUR 105—NLN MOBILITY PROFILE I, BOOK 1 (LPNS ONLY TRACKS I AND II)

5 Credits
Evaluates previous learning and experience to facilitate education mobility.

NUR 106—TRANSITION TO ASSOCIATE DEGREE NURSING (LPNS ONLY TRACK I)

5 Credits
Socializes the LPN into the role of the associate degree nurse. Identifies the role of the associate degree nurse in assisting people in meeting their needs during the childbearing process through adolescence. The nursing process is utilized to promote, maintain and/or restore health.

NUR 107—PRACTICUM: TRANSITION TO ASSOCIATE DEGREE NURSING (LPNS ONLY TRACK I)

3 Credits
Provides campus and clinical laboratory experience to function in the role of the associate degree nursing student in providing care to clients during the childbearing process through adolescence. The nursing process is employed to provide quality nursing care.

NUR 199—COMPETENCY SKILL REVIEW (TRACKS I AND II)

3 Credits
Includes but is not limited to demonstration of specific procedures by faculty or other personnel, student laboratory practice, return demonstration of the specific skill by the student, and the viewing of AV aids pertinent to the clinical setting.

NUR 201—LIFE CYCLE NURSING II (TRACK I)

5 Credits
Examines the role of the associate degree nurse in prioritizing human responses which interfere with basic needs contributing to physical and psychosocial illness. The nursing process is employed to promote, maintain, and/or restore health in young to middle aged clients.

NUR 202—LIFE CYCLE NURSING II PRACTICUM (TRACK I)

5 Credits
Provides clinical experience to demonstrate the role of the associate degree nursing student in providing care to clients in the young to middle aged adult period. Nursing skills are based on identified scientific facts, concepts, and principles. Decision making and appropriate therapeutic communication are emphasized.

NUR 203—LIFE CYCLE NURSING III (TRACK I)

5 Credits
Examines the role of the associate degree nurse in management and advanced communication concepts which are explored, for groups of clients with multiple health care needs. The nursing process is employed to promote, maintain, and/or restore health in the older adult client.

NUR 204—LIFE CYCLE NURSING III PRACTICUM (TRACK I)

5 Credits
Provides clinical opportunity for demonstration and evaluation of personal effectiveness in fulfilling the role of the associate degree nursing student in assisting older adults in meeting their physical and psychosocial health needs. Provides opportunity to utilize the nursing process incorporating management and advanced communication techniques.

NUR 205—ISSUES IN NURSING (TRACKS I AND II)

2 Credits
Examines issues and nursing responsibility to meet changing needs of persons in their environment. Historical aspects, current developments, future trends, improvement of nursing practice, legal/ethical considerations, and personal/professional growth are integrated into the examination of the role of the associate degree nurse.

NUR 211—LIFE CYCLE NURSING I (TRACK II)

5 Credits
Socializes the LPN into the role of the associate degree nurse. Identifies the role of the associate degree nurse in assisting people in meeting their needs during the childbearing process through the preschool years. The nursing process is utilized to promote, maintain and/or restore health.

NUR 212—LIFE CYCLE NURSING II (TRACK II)

5 Credits
Examines the role of the associate degree nurse in prioritizing human responses which interfere with basic needs contributing to physical and psychosocial illness. The nursing process is employed to promote, maintain, and/or restore health from preschool through early adulthood years.

NUR 213—LIFE CYCLE NURSING PRACTICUM (TRACK II)

5 Credits
Provides campus and clinical laboratory experience to function in the role of the associate degree nursing student in providing care to clients during the childbearing process through early adulthood. The nursing process is employed to provide quality nursing care.

NUR 221—LIFE CYCLE NURSING III (TRACK II)

4 Credits
Examines the role of the associate degree nurse in prioritizing human responses which interfere with basic needs contributing to physical and psychosocial illness. The nursing process is employed to promote, maintain, and/or restore health during the middle adulthood period.

NUR 222—LIFE CYCLE NURSING IV (TRACK II)

4 Credits
Examines the role of the associate degree nurse in management and advanced communication concepts which are explored, for groups of clients with multiple health care needs. The nursing process is employed to promote, maintain, and/or restore health in the older adult client.

NUR 223—LIFE CYCLE NURSING PRACTICUM II (TRACK II)

5 Credits
Provides clinical opportunity for demonstration and evaluation of personal effectiveness in fulfilling the role of the associate degree nursing student in assisting adults in meeting their physical and psychosocial health needs. Provides opportunity to utilize the nursing process incorporating management and advanced communication techniques.

NUR 281-293—SPECIAL TOPICS IN ASSOCIATE DEGREE NURSING

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

PRACTICAL NURSING

The Licensed Practical Nurse is an integral part of the health care team. The Practical Nursing program is a one-year course of study leading to a Technical Certificate. This accredited program prepares the individual to take the state licensure exam to become a Licensed Practical Nurse (LPN). The program is designed for students to gain knowledge and technical skills necessary to appropriately care for patients in a variety of health care settings, such as hospitals, convalescent centers, and physician offices. Students learn to administer medications and treatments commonly performed by Licensed Practical nurses.

The program is offered in Valparaiso, Fort Wayne, Lafayette, Indianapolis, Richmond, Columbus, Evansville, South Bend, Terre Haute, Muncie, Bloomington, Madison, Sellersburg and Gary.

TECHNICAL CERTIFICATE PROGRAM

Technical Courses (50 Credits)

Prefix	No.	Title	Semester Credits
PNU	101	Foundations of Nursing	4
PNU	102	Therapeutic Measures	3
PNU	103	Holistic Approach to Health	2
PNU	104	Nutrition	2
PNU	105	Introduction to Clinical Nursing	3
PNU	106	Anatomy and Physiology for PN	5
PNU	107	Cardiopulmonary Nursing	3
PNU	108	Endocrine/Genitourinary Nursing	3
PNU	109	Gastrointestinal/Sensorimotor Nursing	3
PNU	110	Introduction to Pharmacology for PN	2
PNU	111	Pharmacology for Practical Nurses	2
PNU	112	Medical/Surgical Clinical Nursing I	3
PNU	113	Medical/Surgical Clinical Nursing II	2
PNU	114	Nursing Issues and Trends	1
PNU	115	Gerontology	3
PNU	116	Geriatric Clinical Nursing	3
PNU	117	Maternal/Child Nursing	3
PNU	118	Maternal/Child Clinical Nursing	3
		Total Credits	50

PRACTICAL NURSING COURSE DESCRIPTIONS

PNU 101—FOUNDATIONS OF NURSING

4 Credits
The art and science of practical nursing: the goals and the role of the licensed practical nurse on the health care team. Concept of the nursing process as practiced within the wellness/illness continuum. Includes basic nursing care, collection and recording of data.

PNU 102—THERAPEUTIC MEASURES

3 Credits
Focuses on the art and science required for the practical nurse to carry out preventative, therapeutic, and rehabilitative nursing interventions requiring advanced skills and knowledge. Integrates the nursing process and the role of the practical nurse.

PNU 103—HOLISTIC APPROACH TO HEALTH

2 Credits
Orientation to the holistic approach to the art and science of practical nursing. Includes holistic aspects of care, the wellness/illness continuum, and therapeutic relationships.

PNU 104—NUTRITION

2 Credits
Basic principles of nutrition and diet therapy in wellness and illness for various age groups. Considers socio-economic, ethnic and religious factors related to diet. Emphasis on the role of the practical nurse in assisting patients in meeting nutrition needs.

PNU 105—INTRODUCTION TO CLINICAL NURSING

3 Credits
Provides students with opportunities to implement basic nursing skills in the clinical setting. Emphasizes the hygienic and comfort needs of the adult patient and developing basic assessment skills utilizing the nursing process. Concise, accurate documentation of assessments and care delivery is stressed.

PNU 106—ANATOMY AND PHYSIOLOGY FOR PN

5 Credits
Presents structure and function of the human body. Examines the physical and chemical factors enabling human beings to interact with and to maintain homeostasis of the internal environment. Fundamental wellness/illness relationships are integrated.

PNU 107—CARDIOPULMONARY NURSING

3 Credits
Utilizes the nursing process in understanding the pathophysiology and nursing care of patients with cardiovascular/ventilation needs. Emphasizes developing nurse as a communicator and care giver with a holistic approach.

PNU 108—ENDOCRINE/GENITOURINARY NURSING

3 Credits
Utilizes the nursing process in understanding the pathophysiology of hormonal imbalances and urinary elimination needs. Emphasis is on developing the nurse as a communicator and caregiver with a holistic approach; identifying community supports for patients; and developing patient awareness of healthful lifestyle.

PNU 109—GASTROINTESTINAL/SENSORIMOTOR NURSING

3 Credits
Utilizes the nursing process in understanding the pathophysiology of digestion, elimination, mobility, and sensorimotor needs. Develops the nurse as a communicator and caregiver with a holistic approach. Relates patients' psychosocial needs and opportunities for support through community agencies.

PNU 110—INTRODUCTION TO PHARMACOLOGY-PN

2 Credits
The art and science of meeting biopsychosocial needs through administration of pharmacologic agents within the preventative, therapeutic and rehabilitative environment. Defines LPN responsibilities in medication administration. Nursing process is used to assess patient wellness/illness status.

PNU 111—PHARMACOLOGY FOR PRACTICAL NURSES

2 Credits
A survey of common pharmacologic agents. Nursing process is the framework used to meet biopsychosocial needs of individuals along the wellness/illness continuum through the administration of pharmacologic agents. Drug therapy is developed as one aspect of preventative, therapeutic and rehabilitative care of patients in their environment.

PNU 112—MEDICAL SURGICAL CLINICAL NURSING I

3 Credits
Correlates medical surgical content and nursing practice. Nursing process is used as the basis of decision making within the practical nurse role. Emphasis is on the holistic aspects of individuals along the wellness/illness continuum.

PNU 113—MEDICAL SURGICAL CLINICAL NURSING II

2 Credits
Correlates medical surgical content with advanced nursing practice. Nursing process is implemented within the role of the practical nurse.

PNU—114 NURSING ISSUES AND TRENDS

1 Credit
Introduces organizational patterns and the role of Licensed Practical Nurses in the health care delivery systems. Emphasizes continuing education as a means to maintain competencies. Ethical, legal, and historical aspects included to develop awareness of privileges, obligations and responsibilities of the practical nurse.

PNU 115—GERONTOLOGY

3 Credits
Focuses on the normal aging process along the wellness/illness continuum in later life. Trends in preventative, rehabilitative, and therapeutic care are surveyed.

PNU 116—GERIATRIC CLINICAL NURSING

3 Credits
Correlates gerontologic content with holistic care of the older adult. Implements nursing process within the role of the practical nurse to prevent illness or to maintain, promote, and restore health.

PNU 117—MATERNAL CHILD NURSING

3 Credits
Examines conditions and selected interventions based on the nursing process, in providing preventative, rehabilitative and therapeutic care for the mother and child. The role of the Licensed Practical Nurse is identified in providing holistic care within a dynamic environment.

PNU 118—MATERNAL CHILD CLINICAL NURSING

3 Credits
Correlates maternal child content with holistic care of the mother and child. Emphasis is on the normal maternity cycle and normal growth and development of the child within the wellness/illness continuum.

PNU 281-293—SPECIAL TOPICS IN PRACTICAL NURSING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

RADIOLOGIC TECHNOLOGY

The radiologic technologist prepares patients for X-rays; positions them; determines the proper voltage, current, and exposure time; and operates the equipment. Trained radiologic technologists are in demand in hospitals, medical laboratories, physicians' and dentists' offices and clinics, federal and state health agencies and certain educational institutions.

The program includes courses in the following areas: radiologic technique, exposure, positioning, protection, radiation physics, and ethics. Clinical practice and supplemental instruction are provided in accredited hospitals. Upon completion of program requirements, graduates are eligible to take the National Registry Examination.

The program is offered in Indianapolis and Terre Haute.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (55 Credits)

Prefix	No.	Title	Semester Credits
RAD	101	Orientation & Nursing in Radiologic Technology	3
RAD	102	Principles of Radiographic Exposure	4
RAD	103	Radiographic Positioning I	3
RAD	104	X-Ray Clinical Education I	4
RAD	105	Radiographic Positioning II	3
RAD	106	X-Ray Clinical Education II	3
RAD	107	Radiation Physics	3
RAD	108	Radiographic Quality Assurance	2
RAD	109	Imaging Techniques	2
RAD	201	Radiographic Positioning III	3
RAD	202	X-Ray Clinical Education III	6
RAD	203	X-Ray Clinical Education IV	6
RAD	204	X-Ray Clinical Education V	5
RAD	205	Pathology for Radiologic Technology	2
RAD	206	Radiobiology	3
RAD	299	General Exam Review	3

General Education Requirements (19 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
SOC	101	Human Relations	3
SCI	113	Anatomy and Physiology I	3
SCI	115	Anatomy and Physiology II	3
MEA	101	Medical Terminology	3
MEA	103	Medical Law and Ethics	1
RAD	110	Technical Math for Health Occupations	3

Regional Electives (3 Credits) 3

Total Credits 77

RADIOLOGIC TECHNOLOGY COURSE DESCRIPTIONS

RAD 101—ORIENTATION AND NURSING PROCEDURES FOR X-RAY TECHNOLOGY

3 Credits
History and application of diagnostic X-ray from its discovery to modern procedures. Introduces principles, properties, and safe usages. Emphasizes patient, technologist, and physician safety, along with patient-technologist relationships, asepsis, isolation, and first aid. Introduction to abdomen and chest positioning.

RAD 102—PRINCIPLES OF RADIOGRAPHIC EXPOSURES

4 Credits
Presents individual and group characteristics needed to produce the ideal radiograph. Knowledge of interchangeability of mAs, kVp, film/screen combinations, distance, and grids. Also factors and considerations needed for pediatric techniques, calibration, heat unit calculation, and technique chart construction.

RAD 103—RADIOGRAPH POSITIONING I

3 Credits
Correlates positioning, terminology, techniques and film evaluation with exams of the upper extremity, upper and lower gastrointestinal tract, and intravenous pyelogram examinations.

RAD 104—X-RAY CLINICAL EDUCATION I

4 Credits
Implements Clinical Category 1 of the Competency Model. Includes laboratory demonstration, clinical practice, and supervised clinical experience.

RAD 105—RADIOGRAPHIC POSITIONING II

3 Credits
Correlates positioning terminology and techniques and film evaluation with exams of the lower extremity, additional contrast studies.

RAD 106—X-RAY CLINICAL EDUCATION II

3 Credits
Category 2 of the Competency Laboratory Model, testing competency and proficiency of skills from Category 1 and 2. Includes supervised clinical experience.

RAD 107—RADIATION PHYSICS

3 Credits
Introduces physics as utilized in the production of X-rays. Includes laws of physics pertaining to atomic structure, chemical properties and reactions, and electrical circuitry. Also covers equipment and methods of generation and measurement of electricity.

RAD 108—RADIOGRAPHIC QUALITY ASSURANCE

2 Credits
Presents theories and practices pertaining to the establishment of department exposure standards. Includes equipment tests for reliability, problem solving, reject analysis, and cost containment. Hands-on experience in processor monitoring, record keeping, and radiographic quality control tests.

RAD 109—IMAGING TECHNIQUES

2 Credits
Theories, principles, and demonstrations of current imaging modalities, including the image intensifier, tomography, video and cine camera, serial changers, subtraction technique, polaroid, thermography, ultrasound, and xeroradiography.

RAD 110—TECHNICAL MATH FOR HEALTH OCCUPATIONS

3 Credits
Basic instruction in technical mathematics for students in health occupations. Includes review of arithmetic, basic concepts of algebra, graphing geometry, and logarithms.

RAD 201—RADIOGRAPHIC POSITIONING III

3 Credits
Covers positioning terminology, techniques, and film evaluations of the cranium, vertebral column, mammography, and routine special radiographic procedures.

RAD 202—X-RAY CLINICAL EDUCATION III

6 Credits
Introduces Category 3 of the Competency Model, proficiency testing over Category 1 and 2, skills and competency testing over Category 3. Includes supervised clinical experience and skill maintenance.

RAD 203—X-RAY CLINICAL EDUCATION IV

6 Credits
Introduces Category 4 of the Competency Model in laboratory proficiency testing of skills learned in Category 1, 2, and 3, and competency in Category 4. Includes supervised clinical experience.

RAD 204—X-RAY CLINICAL EDUCATION V

5 Credits
Includes final competency testing for students who have not completed X-ray Clinical Education IV. Continues maintenance over all categories. Includes supervised clinical experience.

RAD 205—PATHOLOGY FOR RADIOLOGIC TECHNOLOGY

2 Credits
Examines basic concepts concerning disease, its causes, and the resulting changes as viewed radiographically. Emphasis is placed on needed technical changes to produce optimal radiographs from correlations to patient symptoms.

RAD 206—RADIOBIOLOGY

3 Credits
Theory and principles of the effects of ionizing radiation upon living tissues. Includes a review of dosage, measurements, DNA structure and function, and cellular radiosensitivity.

RAD 281-293—SPECIAL TOPICS IN RADIOLOGIC TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

RAD 299—GENERAL EXAMINATION REVIEW

3 Credits
Reviews content of program, emphasizing anatomy, physics, exposure principles, and positioning. Simulated Registry exams prepare the student for American Registry of Radiologic Technologist Examination.

RESPIRATORY CARE

A respiratory care practitioner is an allied health professional who works under the direction of physicians in the diagnosis, evaluation, treatment, education and care of patients with cardiopulmonary diseases or abnormalities.

A graduate of the Associate in Applied Science program will be eligible to sit for the Entry Level and Advanced Practitioner exams given by the National Board for Respiratory Care (NBRC). Successful exam candidates will be awarded the Registered Respiratory Therapist credential. A graduate of the entry level program will be eligible to sit for the entry-level practitioner exam given by the NBRC. Successful exam candidates will be awarded the Certified Respiratory Therapy Technician credential.

The two-year Associate in Applied Science degree requires 81 credits for completion. Technical Certificates are also offered. Programs are offered in Fort Wayne, Indianapolis, Lafayette and Valparaiso.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (57 Credits)

Prefix	No.	Title	Semester Credits
RES	101	Respiratory Care Science I	3
RES	102	Respiratory Care Science II	3
RES	103	Respiratory Care Science III	3
RES	104	Respiratory Care Science IV	3
RES	105	Biophysics for Respiratory Care	3
RES	106	Clinical Medicine	3
RES	107	Cardiopulmonary Physiology	3
RES	108	Clinical Practicum I	3
RES	109	Clinical Practicum II	3
RES	110	Clinical Practicum III	3
RES	111	Clinical Practicum IV	3
RES	201	Respiratory Care Science V	3
RES	202	Respiratory Care Science VI	3
RES	203	Pathophysiology and Monitoring	3
RES	204	Clinical Practicum V	3
RES	205	Clinical Practicum VI	3
RES	206	Clinical Practicum VII	3
INF	101	Introduction to Microcomputers	3
IST	102	Techniques of Supervision	3

General Education Requirements (24 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
SOC	101	Human Relations	3
MAT	101	Algebra I or	3
RAD	110	Technical Math for Health Occupations	3
SCI	107	Chemistry	3
SCI	111	Microbiology	3
SCI	113	Anatomy & Physiology I	3
SCI	115	Anatomy & Physiology II	3
MEA	113	Pharmacology	3
		Total Credits	81

RESPIRATORY CARE COURSE DESCRIPTIONS

RES 101—RESPIRATORY CARE SCIENCE I

3 Credits
Includes condensed history of respiratory care: principles/practices of oxygen administration; equipment cleaning and sterilization techniques; and gas analyzers. Includes patient care needs, asepsis, body mechanics, physical assessment, isolation techniques, medical terminology and medical records.

RES 102—RESPIRATORY CARE SCIENCE II

3 Credits
Includes principles and practices of oxygen administration: gas blenders; humidity and aerosol therapies; environmental therapy; introduction to manual resuscitators; and therapeutics of incentive spirometry. Includes selected aspects of ethical practice.

RES 103—RESPIRATORY CARE SCIENCE III

3 Credits
Covers medicinal aerosol therapy and respiratory pharmacology, ultrasonic therapy, positive pressure breathing modalities, chest physiotherapy and pulmonary rehabilitation. Introduces basic pulmonary function testing. Selected aspects of ethical and legal respiratory practice are presented.

RES 104—RESPIRATORY CARE SCIENCE IV

3 Credits
Covers basic airway care, basic arterial blood gas analysis and interpretation and basic medical laboratory data. Concepts and techniques of critical respiratory care of adults and infants. Includes adult, pediatric, and neonatal mechanical ventilators and related monitoring equipment.

RES 105—BIOPHYSICS FOR RESPIRATORY CARE

3 Credits
Basic principles of physics related to respiratory care. Emphasis is placed on principles of motion, work, energy, electricity and bioelectricity and properties of liquids and gases.

RES 106—CLINICAL MEDICINE

3 Credits
Introduces etiology, symptomatology, diagnosis, therapeutics and prognosis of selected pulmonary diseases.

RES 107—CARDIOPULMONARY PHYSIOLOGY

3 Credits
Covers the cardiopulmonary system including ventilation, perfusion, and gas exchange. Introduces arterial blood gases, acid-base regulation and physiologic monitoring.

RES 108—CLINICAL PRACTICUM I

3 Credits
Introduction to the hospital environment. Experiences in various hospitals with respiratory care departments, patient charts, patient identification and communication.

RES 109—CLINICAL PRACTICUM II

3 Credits
Provides supervised experience in oxygen therapy, incentive spirometry, humidity/aerosol therapy and charting. Continuing certification in CPR is required.

RES 110—CLINICAL PRACTICUM III

3 Credits
Supervised experience in selected therapeutic modalities. Introduction to chest physiotherapy, medicinal aerosol therapy, intermittent positive pressure breathing and ultrasonic therapy. Continuing certification in CPR is required.

RES 111—CLINICAL PRACTICUM IV

3 Credits
Additional supervised experience in selected therapeutic modalities. Introduction to basic cardiopulmonary testing and mechanical ventilation is included. Continuing certification in CPR is required.

RES 201—RESPIRATORY CARE SCIENCE V

3 Credits
Includes in-depth approaches to the respiratory care management of critically ill neonatal, pediatric and adult patients. Special emphasis on techniques of patient evaluation, monitoring, transportation and management.

RES 202—RESPIRATORY CARE SCIENCE VI

3 Credits
Covers advanced techniques of mechanical ventilation of neonatal, pediatric and adult patients. Includes advanced techniques of patient assessment through pulmonary function testing and other selected assessment techniques.

RES 203—PATHOPHYSIOLOGY AND MONITORING

3 Credits
Includes etiology, symptomatology, diagnosis, therapeutics and prognosis of disease conditions related to respiratory care including relationships of body systems. Covers various equipment, techniques of data collection, interpretation and evaluation of data used in monitoring the cardiopulmonary system.

RES 204—CLINICAL PRACTICUM V

3 Credits
Provides additional supervised experience in selected therapeutic modalities. Includes advanced patient assessment, clinical experience in adult critical care, arterial blood gas analysis and airway care. Continuing certification in CPR is required.

RES 205—CLINICAL PRACTICUM VI

3 Credits
Additional supervised experience in selected therapeutic modalities. Includes advanced clinical experience in adult, pediatric and neonatal critical care and experience in adult education. Continuing certification in CPR is required.

RES 206—CLINICAL PRACTICUM VII

3 Credits
Includes additional supervised experience in selected therapeutic modalities. Includes advanced cardiopulmonary diagnostic techniques, application of invasive and non-invasive monitoring of the cardiopulmonary system, experience in respiratory care departmental management and quality assurance roles. Continuing certification in CPR is required.

RES 281-293—SPECIAL TOPICS IN RESPIRATORY THERAPY TECHNOLOGY

1-5 Credits
A Special Topics Course provides student with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

RES 299—COMPREHENSIVE REVIEW

3 Credits
Reviews selected material to prepare students for the National Board of Respiratory Care examinations. Course content is based on the current matrix for the examinations.

SURGICAL TECHNOLOGY

The surgical technologist is a highly skilled member of the surgical team, qualified by didactic and clinical education, to provide safe and efficient care to the patient in the operating room. The didactic education consists of courses in Anatomy and Physiology, Microbiology, Pharmacology, Medical Law and Ethics, Surgical Techniques, and Surgical Procedures.

Closely supervised clinical education is provided in local area hospitals. The surgical technologist actively participates in surgery by performing scrub and/or circulating duties which include: passing instruments and supplies to the surgical team members, preparing and positioning the patient, operating equipment, assisting the anesthesiologist, and keeping accurate records. Obstetrical and Emergency Room clinical experiences may be provided by specific hospitals. The program is one calendar year in length requiring 55 credits leading to a Technical Certificate. The program is offered in Valparaiso, Lafayette, Indianapolis and Evansville.

TECHNICAL CERTIFICATE PROGRAM

Technical Courses (39 Credits)

Prefix	No.	Title	Semester Credits
SUR	101	Surgical Techniques	3
SUR	102	Surgical Procedures I	3
SUR	103	Fundamentals of Surgical Technology	6
SUR	104	Surgical Procedures II	6
SUR	105	Clinical Applications I	9
SUR	106	Surgical Procedures III	3
SUR	107	Clinical Applications II	9

General Education Courses (16 Credits)

Prefix	No.	Title	
SOC	101	Human Relations	3
SCI	111	Microbiology	3
SCI	113	Anatomy & Physiology I	3
SCI	115	Anatomy & Physiology II	3
MEA	103	Medical Law and Ethics	1
MEA	113	Pharmacology	3
		Total Credits	55

SURGICAL TECHNOLOGY COURSE DESCRIPTIONS

SUR 101—SURGICAL TECHNIQUES

3 Credits
Introduction to principles of sterile technique and the operative care of the surgical patient. Includes the roles of scrubbing and circulating duties.

SUR 102—SURGICAL PROCEDURES I

3 Credits
Orientation to the role of a surgical technologist. Introduction to the surgical facility, aseptic technique, and basic surgical procedures with review of total patient care including pre-operative care, diagnostic tests, and immediate post-operative care.

SUR 103—FUNDAMENTALS OF SURGICAL TECHNOLOGY

6 Credits
Demonstration and supervised practice of general surgical procedures. Students correlate theory to clinical by actively participating as members of surgical team. Includes laboratory and clinical components.

SUR 104—SURGICAL PROCEDURES II

6 Credits
A study of advanced surgical procedures in relation to the total physiological aspects of surgical intervention. This includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure, and a review of total patient care.

SUR 105—CLINICAL APPLICATIONS I

9 Credits
Correlates the basic principles and theories of the study of advanced surgical procedures to the clinical performance in affiliating hospitals. This includes the knowledge, skills and attitudes necessary for successful implementation of safe patient care in an operating room.

SUR 106—SURGICAL PROCEDURES III

3 Credits
A study of specialized surgical procedures in relation to the total physiological aspect of surgical intervention. This includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure, and a review of total patient care.

SUR 107—CLINICAL APPLICATIONS II

9 Credits
Correlates the principles and theories of specialized surgical procedures to the clinical performance in affiliating hospitals. This includes the knowledge, skills, and attitudes necessary for successful implementation of safe patient care in an operating room.

SUR 281-293—SPECIAL TOPICS IN SURGICAL TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

DIVISION OF APPLIED SCIENCES AND TECHNOLOGIES

The Division of Applied Science and Technologies provides broad, practical training for those seeking employment and advancement in craft and technical occupations. The programs emphasize the ability to think and plan in the job setting. Initial laboratory experiences develop skills in the use of modern industrial equipment and measuring instruments. Later classroom and laboratory work provide training in industrial applications of theory, analysis, design, and construction techniques. Each program provides opportunities for the student to advance from basic skills to proficiency on a high technological level.

Program advisory committees, composed of experts in each area of industry, serve the important function of keeping the content of the programs current with changes in technology. Ivy Tech's programs and courses are designed to meet the needs of local industries. The practical value of the coursework is substantiated by its use in the training programs of many local industries. The student is advised to contact the nearest center for information concerning programs and course offerings.

AGRICULTURAL EQUIPMENT

The Agricultural Equipment Technology program develops technicians who service, maintain, and repair on- and off-farm agricultural equipment. Technicians are trained in preventive maintenance, including testing, adjustment, cleaning and tuning engines as well as servicing and adjusting other farm equipment. Courses are offered in general farm equipment repair, diesel and gas powered engine overhaul, transmissions and drive train repair, air conditioning, electrical repair, lawn and garden equipment and hydraulics. Students are provided with practical experiences with hands-on training.

A two-year program requiring 66 credits leads to an Associate in Applied Science Degree. The program is offered at Lafayette.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (51 Credits)

Prefix	No.	Title	Semester Credits
INF	101	Introduction to Microcomputers	3
AGR	101	Farm Machinery I	3
AGR	102	Farm Machinery II	3
AGR	103	Agricultural and Industrial Power Trains	3
AGR	105	Mobile Hydraulics	3
AGR	106	Gas and Diesel Engine Theory and Design	3
AGR	201	Farm Machinery III	3
AGR	202	Lawn and Garden Equipment	3
DPT	201	Diesel Overhaul I	3
DPT	202	Diesel Fuel Systems II	3
DPT	205	Diesel Overhaul II	3
DPT	206	Diesel Engine Tune Up	3
WLD	114	Introductory Welding	3
ELT	113	Basic Electricity	3
AST	104	Start and Charge Systems	3
IMT	104	Fluid Power Basics	3
AST	201	Heating and A/C Principles	3

General Education Requirements (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	107	Math of Finance	3
SOC	101	Human Relations	3
SCI	101	Physical Science	3
		Total Credits	66

AGRICULTURAL EQUIPMENT COURSE DESCRIPTIONS

AGR 101—FARM MACHINERY I

3 Credits
Introduces basic and special tools and uses in the maintenance and repair of farm equipment. Covers: fuel requirements and specifications for fuels used in internal combustion engines; coolant service requirements with emphasis on preventive maintenance; friction and anti-friction bearings; and, dust seals and proper installation procedures, with attention to proper preload and end play of bearings. Also, belt and chain types, load ratings and installation with attention to alignment.

AGR 102—FARM MACHINERY II

3 Credits
Examines primary and secondary soil tillage tools; setup, adjustment and predelivery performance of plows, disk, harrows. Covers setup, adjustment and calibration of the components of planters, drills, and chemical, fertilizer, and cultivation machinery with emphasis on environmental factors and safety in using crop chemicals.

AGR 103—AGRICULTURAL AND INDUSTRIAL POWER TRAINS

3 Credits
Operation and repair of manual transmission and related components of the power train including clutches, differentials, final drives, power take off mechanisms, manual steering and brakes. Includes components of hydraulic assist transmissions, brakes and clutches, and hydrostatic drive transmissions including variable flow hydrostatic pumps, motors, and related components.

AGR 105—MOBILE HYDRAULICS

3 Credits
Emphasizes the maintenance and repair of hydraulic systems in agricultural and industrial equipment. Includes overhaul of pumps, cylinders, and motors and replacement of relief valves and their hydraulic components. Also covers trouble-shooting, flow and pressure tests, hitch adjustments, and repair on agricultural tractors.

AGR 106—GAS AND DIESEL ENGINE THEORY AND DESIGN

3 Credits
Fundamentals of gas and diesel engines. Design and construction of the internal combustion engine: the basic parts; the principle of heat and combustion; and differences in two-cycle and four-cycle engines.

AGR 201—FARM MACHINERY III

3 Credits
Types of harvesting and handling machinery commonly used on farms. Includes predelivery performance, adjustments, repair and maintenance on mowers, hay rakes, bean and corn combines, balers, forage harvesters, grain dryers, elevators, and related equipment, with emphasis on operation safety.

AGR 202—LAWN AND GARDEN EQUIPMENT

3 Credits
Covers the maintenance, adjustment, and repair of internal combustion engines of less than 35 horsepower and lawn and garden equipment such as tillers, seeders, harrows, rakes, mowers, standby alternators and irrigation pumps.

AGR 203—SERVICE DEPARTMENT MANAGEMENT

3 Credits
Instruction in operating the service department under accepted management procedure with selling of a purchased commodity-labor as the basis for the course; includes recovered labor costs, incentive programs, scheduling show flows, flat rate, shop tickets, merchandising, and customer relations.

AGR 204—FARM MACHINERY MANAGEMENT

3 Credits
A study of efficient farm production including tract work capacity, expected tractor and machinery depreciation, custom work, leasing ownership, operating costs, and long range plan for replacement.

AGR 281-293—SPECIAL TOPICS IN AGRICULTURAL EQUIPMENT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

APPLIED FIRE SCIENCE TECHNOLOGY

The Applied Fire Science Technology program provides students with course work in theory, formula, and application of the science of firefighting. This is coupled with extensive "hands-on" practical skills, abilities, and knowledge training, to prepare graduates for employment and promotional advancements in fire departments, industrial plants, fire underwriters groups, and building fire safety organizations.

The two-year program, requiring 63 credits, leads to the Associate in Applied Science degree. Technical Certificates are also available in specialized areas. The program is offered in Gary, Fort Wayne and Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (30 Credits)

Prefix	No.	Title	Semester Credits
AFS	101	Fire Technology	3
AFS	102	Fire Apparatus and Equipment	3
AFS	103	Firefighting Strategy and Tactics	3
AFS	104	Building Construction Fire Service	3
AFS	105	Fire/Arson Investigation	3
AFS	106	Hazardous Materials	3
AFS	108	Fire Prevention/Inspection	3
AFS	201	Fire Alarm and Protection Equipment	3
AFS	202	Fire Service Organization and Management	3
AFS	204	Fire Service Hydraulics	3

General Education Courses (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I	3
SOC	101	Human Relations	3
SCI	107	Chemistry	3
INF	101	Introduction to Microcomputers	3

Regional Electives (15 Credits)		15
	Total Credits	63

APPLIED FIRE SCIENCE COURSE DESCRIPTIONS

AFS 101—FIRE TECHNOLOGY

3 Credits
A general introduction to the study of fire science. Covers the history of fire fighting, types of fire apparatus and protection systems, and general fire problems. Includes study of the chemical and hazardous properties of combustion and related by-products.

AFS 102—FIRE APPARATUS AND EQUIPMENT

3 Credits
An in-depth examination of the various types of fire apparatus in current use, including pumpers, aerials, elevating platforms, and rescue apparatus. Coursework, utilizing N.F.P.A. 1500 and 1901, develops skills in the selection of appropriate apparatus and the preparation of specifications. Includes evaluating bids, financing and equipment selection.

AFS 103—FIREFIGHTING STRATEGY AND TACTICS

3 Credits
Focuses on decision-making related to fireground strategies and tactics at the company level. Various priority scenarios are presented, which include preparation for incident command and commanding the initial response. Emphasizes company operation and basic command decisions.

AFS 104—BUILDING CONSTRUCTION FIRE SERVICE

3 Credits
The design principles involved in the protection of a structure from fire involvement are examined. Examines the signs, symptoms, and indicators of partial or total building collapse in firefighting operations. Includes study of legislative codes and laws concerning: Building Design, Building Fire Safety, Classification of Building Construction, and Blue Print Reading.

AFS 105—FIRE/ARSON INVESTIGATION

3 Credits
Focuses on the responsibility of the firefighter, the investigator, and the department in fire scene investigations. Includes fire cause and loss, collection and preservation of evidence and determination of fire origin, with emphasis on the application of various scientific aids that assist in investigations.

AFS 106—HAZARDOUS MATERIALS

4 Credits
Introduces basic chemistry in the study of the properties, derivations and uses of explosives and other dangerous materials. These include flammable liquids and solids, oxidizing materials, corrosives, and compressed gases. The identification of chemicals, storage, and handling of hazardous materials are emphasized.

AFS 107—COMMANDING INITIAL RESPONSE

3 Credits
Designed to provide participants with information and skills needed to establish command, perform size up, develop and implement an action plan, transfer command and organize an incident using an effective command system.

AFS 108—FIRE PREVENTION/INSPECTION

3 Credits
Examines the function of the fire inspector and organization of the fire prevention unit. Emphasizes the identification of the various codes and regulations utilized by the inspector, with special attention given to the Indiana Fire Code. Includes: the legal authority governing fire prevention, application of the fire code, and management principles as applied to a bureau.

AFS 201—FIRE ALARM AND PROTECTION EQUIPMENT

3 Credits
Provides a basic introduction to fire alarm monitoring devices and extinguishing systems, with implications for fire protection and commercial applications. Technical areas of study include: fire extinguishing agents, portable fire extinguishers, carbon dioxide systems, dry chemical systems, halogenated/foam systems, and building monitoring systems.

AFS 202—FIRE SERVICE ORGANIZATION AND MANAGEMENT

3 Credits
The principles and functions of fire science administration and management personnel are introduced. Areas of study include: department organization; administrative and management procedures, personnel selection; line and staff functions; communications; the fire company unit; public relations; and, current problems in administration.

AFS 203—INCIDENT COMMAND

3 Credits
Emphasizes leadership in the application of knowledge pertaining to fire hazards and cause, firefighting strategy and tactics, fire technology and safety practices as described in N.F.P.A. 1021.

AFS 204—FIRE SERVICE HYDRAULICS

3 Credits
This study of compressible fluids includes: fluid properties, principles of fluid statics, flow system principles, pipe friction and heat loss, flow measurements, pumps and other hydraulic devices and machinery, with applications for fire protection and water supply systems.

AFS 205—AIRCRAFT FIRE FIGHTING

3 Credits
The hazards associated with aircraft firefighting are examined. Emphasizes the use of airport fire fighting equipment, extinguishing agents, strategy and tactics, rescue methods, and aircraft design and construction.

AFS 206—SHIPBOARD FIRE FIGHTING

3 Credits
Focuses on fire fighting strategy and tactics for land-based fire department personnel and equipment. Includes survey of equipment, hookups, procedures, incident command, the use of foam, and support systems on ships.

AFS 207—FIRE SAFETY HAZARD RECOGNITION

3 Credits
An intensive study of "the fire problem." A survey of physical, chemical and electrical hazards and their relationship to loss of property and/or life. Safe storage and handling of hazardous material.

AFS 208—INDUSTRIAL SAFETY AND FIRE CONTROL

3 Credits
Provides for comprehensive study of industrial fire loss prevention and control management programs. Includes: procedures for fire risk and loss control; standards and specifications for equipment; laws, codes and regulations; organization of fire brigades; and, administrative control of industrial operation.

AFS 209—FIREGROUND MANAGEMENT

3 Credits
Emphasizes the command and control of major fire department operations at an advanced level, linking operations and safety. Areas of study include: pre-incident preparation, size-up, incident command system, and incident management. Utilizes simulated incidents requiring the applications of appropriate solutions.

AFS 210—COMPUTERS FOR THE FIRE SERVICE

3 Credits
Examines the use of computers in the fire service. Includes computer-ordered dispatch, data information retrieval of hazardous materials control, and intervention, as well as text-editing abilities.

AFS 281-293—SPECIAL TOPICS IN APPLIED FIRE SCIENCE TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

AUTOMATED MANUFACTURING TECHNOLOGY

The Automated Manufacturing Technology program prepares technicians to design, install, calibrate, program, operate, test, analyze, troubleshoot, service and repair advanced manufacturing, assembly, and materials-handling systems and data computer networks. This is a multidisciplinary program which utilizes mechanical, electrical, thermal, and fluid technology to: shape, form and process raw materials into finished products; assemble parts into finished products using sensing, vision, and robotic techniques; use automated modern material handling techniques including conveyors, manless parts vehicles, and storage systems; and use computer data communications networks such as machine controllers, robot controllers, cell computers and computers adapted for inventory control and manufacturing.

Coursework includes studies in technical math, physics, written and oral communications, interpersonal and human relations. Technical study covers electricity electronics, solid state devices, digital electronics, microprocessor and computer fundamentals, programmable controllers, hydraulics, pneumatics, servo-mechanisms, drives and drive-trains, robots, work cells and flexible manufacturing systems, machine tools, computer-aided drafting/computer-aided manufacturing, computer numerical control, and computer integrated manufacturing.

The two-year program requiring completion of 70 credits leads to the Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. The program is offered at Gary, South Bend, Fort Wayne, Lafayette, Kokomo, Muncie, Terre Haute, Indianapolis, Richmond, Columbus, Madison, Evansville and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (44 Credits)

Prefix	No.	Title	Semester Credits
AMT	101	Manufacturing Processes	3
AMT	102	Introduction to Robotics	3
AMT	201	Manufacturing Systems Control	3
AMT	202	Work Cell Design and Integration	3
AMT	203	Automation Electronics	3
AMT	204	Automation Management	3
AMT	205	Automated Manufacturing Systems	3
ELT	103	Digital Principles	4
ELT	104	Computer Fundamentals for Technology	3
ELT	105	Solid State I	3
ELT	100	Circuits I	4
DCT	103	CAD Fundamentals	3
IMT	104	Fluid Power Basics	3
MTT	204	CNC Programming I	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
MAT	104	Algebra/Trigonometry I	3
SCI	103	Physics I	3
SCI	105	Physics II or	3
SCI	203	Advanced Physics	

SOC	101	Human Relations	3
ENG	201	Technical Writing	3

Regional Electives (8 Credits) 8

Total Credits 70

AUTOMATED MANUFACTURING TECHNOLOGY COURSE DESCRIPTIONS

AMT 101—MANUFACTURING PROCESSES

3 Credits
A basic survey of manufacturing processes, tools and equipment used by modern industry to convert bars, forgings, castings, plates and sheet materials into finished products. Includes basic mechanics of materials removal and forming, metrology, quality control, and safety of operations.

AMT 102—INTRODUCTION TO ROBOTICS

3 Credits
Introduces robotics and automated systems and their operation. Includes robotics principles of operation and work envelopes. Various coordinate systems and how hydraulic, pneumatic and electromechanical systems function together as a system. Also covers servo and nonservo controls, system capabilities and limitations, and safety. Robot tooling is investigated including welders, grippers, magnetic pickups, vacuum pickups, compliance devices, adhesive applicators, and paint sprayers.

AMT 104—CNC MILL PROGRAMMING I

3 Credits
A review of the various industrial applications of CNC milling machines. Lectures will involve discussions of numerous milling cycles found on state-of-the-art equipment. Manual programming, set up, and operation will be practiced. Basic tooling used on industrial CNC mills will be identified and used in laboratory settings. Precision measurement techniques will be identified and practiced.

AMT 105—CNC MILL PROGRAMMING II

3 Credits
CNC Mill Programming II presents advanced training on the manual programming of CNC machining centers. Milling, drilling, reaming, pocket milling, and tapping cycles will be practiced. Sub-routine programming will also be practiced along with machine set up, processing, machining center operation and tooling requirements.

AMT 106—COMPUTER ASSISTED MILL PROGRAMMING

3 Credits
The study and applications of advanced computer programming techniques using menu driven software to generate part programs for CNC machining centers. Post processing, interactive graphics, program simulation and CAD/CAM will be covered. Students will practice these techniques of state-of-the-art programming stations and CNC machining centers.

AMT 107—CNC LATHE PROGRAMMING I

3 Credits
A review of the various industrial applications of computer numerically controlled lathes. Lectures will involve discussion of numerous turning cycles found on more sophisticated lathe controllers. Manual programming, set up, and operation of industrial lathes will be practiced. Basic tooling used on industrial CNC lathes will also be covered. Students will practice these techniques of state-of-the-art programming stations and CNC machining centers.

AMT 108—CNC LATHE PROGRAMMING II

3 Credits
The study and operation of advanced manual programming techniques used on industrial turret lathes. Turning, boring, grooving, and threading cycles will be practiced with advanced sub-routine programming methods. Students will also receive further training on set up, processing, machine operation, and lathe tooling.

AMT 109—COMPUTER ASSISTED LATHE PROGRAMMING

3 Credits
The study and application of advanced computer programming techniques. Students receive hands-on training using menu driven software to generate part programs for CNC lathes. Post processing, interactive graphics, program simulation and CAD/CAM will be covered. Students will perform these techniques on state-of-the-art programming stations and CNC turret lathes.

AMT 110—ROBOTICS AND AUTOMATED SYSTEMS

3 Credits
This course introduces the student to robotics and automated systems and their operating characteristics. Topics to be covered include robotics principles of operation and work envelopes. Students will learn the various coordinate systems and how hydraulic, pneumatic and electromechanical systems function together as a system. Other subjects to be covered include servo and nonservo controls, system capabilities and limitations, and safety. Robot tooling will be investigated including welders, grippers, magnetic pickups, vacuum pickups, compliance devices, adhesive applicators, and paint sprayers.

AMT 201—MANUFACTURING SYSTEMS CONTROL

3 Credits
An introduction to the field of industrial controls. Covers the principles of control systems as applied to a production system to achieve automation. Systems included are stepper motors, programmable logic controllers, microprocessors, computers, and feedback systems. Emphasis is on programmable logic controllers and the local area network.

AMT 202—WORK CELL DESIGN AND INTEGRATION

3 Credits
Investigates principles of design and implementation of robots in industrial work cells. Covers selection of the best work site and robot system, application of cell sensor, development of cycle times, economic analysis, safety considerations, proposal preparation, and human resources development.

AMT 203—AUTOMATION ELECTRONICS

3 Credits
The operation and application of electronic devices in the automation field. Applications include linear integrated circuits, sensors and interfacing systems, actuators and drive controls, and process control techniques.

AMT 204—AUTOMATION MANAGEMENT

3 Credits
Designed to provide training in basic principles applications in short and long term planning and control of operations for production and services and improvement programs in any organization. Includes: characteristics of systems and solution of problems for process of products and service operations; methods analysis; cost estimating; facilities planning, tooling and services acquisition and maintenance; production, project, and program scheduling; materials and inventory management; safety and loss prevention; decision making tools and the evaluation of alternatives.

AMT 205—AUTOMATED MANUFACTURING SYSTEMS

3 Credits
Students, working in teams and under the instructor's supervision, will select equipment, write specifications, design fixtures and interconnects, integrate systems, provide interfaces and make the assigned systems operational to produce "marketable" products.

AMT 281-293—SPECIAL TOPICS IN AUTOMATED MANUFACTURING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

AUTOMOTIVE BODY REPAIR TECHNOLOGY

The Automotive Body Repair Technology program prepares students to become qualified body repair technicians. Courses are offered in body, frame, and chassis repair, collision damage, paint refinishing, fiberglass/plastics repair, sheet metal repair, and welding. Training laboratories offer experience on up-to-date, sophisticated equipment, such as the bench measuring and pulling systems used in precision alignment.

A one-year program, requiring 42 credits, leads to the Technical Certificate. The programs are offered in Gary, Indianapolis, Kokomo, Lafayette, Madison, Muncie, Terre Haute and Sellersburg.

TECHNICAL CERTIFICATE PROGRAM

Technical Courses (27 Credits)

Prefix	No.	Title	Semester Credits
ABR	101	Body Repair Fundamentals	3
ABR	103	Auto Paint Fundamentals	3
ABR	104	Collision Damage Analysis and Repair	3
ABR	105	Conventional Frame Diagnosis and Correction	3
ABR	106	Body Repair Applications	3
ABR	107	Automotive Refinishing Technology	3
ABR	108	Unibody Structural Analysis and Repair	3
ABR	109	Collision Damage Appraising	3
WLD	114	Introductory Welding	3

General Education Requirements (6 Credits)

Prefix	No.	Title	
ENG	101	English Composition or,	
SOC	101	Human Relations	3
REL	111	Technical Mathematics I	3

Regional Electives (9 Credits)		9
	Total Credits	42

AUTOMOTIVE BODY REPAIR TECHNOLOGY COURSE DESCRIPTIONS

ABR 101—BODY REPAIR FUNDAMENTALS

3 Credits
Examines the characteristics of body metals and includes the installation of mouldings, ornaments and fasteners with emphasis on sheet metal analysis and safety.

ABR 103—AUTO PAINT FUNDAMENTALS

3 Credits
Introduces auto paint with emphasis on the handling of materials and equipment in modern automotive technologies.

ABR 104—COLLISION DAMAGE ANALYSIS AND REPAIR

3 Credits
Instruction in analyzing extensive body damage and determining the tools and procedures needed to replace panels.

ABR 105—CONVENTIONAL FRAME DIAGNOSIS AND CORRECTION

3 Credits
The use of tools, frame machines and equipment for frame and chassis repair. Includes study of terms pertaining to front suspension and rear axle. The use of frame gauges, tram gauges and other measuring devices.

ABR 106—BODY REPAIR APPLICATIONS

3 Credits
Fundamentals of using hand and power tools in the repair of minor collision damage, with emphasis on safety.

ABR 107—AUTOMOTIVE REFINISHING TECHNOLOGY

3 Credits
Instruction in the total refinishing of an automobile with emphasis on advanced and specialty painting techniques.

ABR 108—UNIBODY STRUCTURAL ANALYSIS AND REPAIR

3 Credits
Unibody repairs; identification and analysis of damage; measuring and fixturing systems; straightening systems and techniques; mechanical component service and knowledge of suspension; and steering systems on front wheel drive unibody vehicles.

ABR 109—COLLISION DAMAGE APPRAISING

3 Credits
Uses of estimation guides, procedures for itemizing damage, abbreviations, parts numbers, and uses of time and money conversion tables. Emphasizes damage inspection, recording on estimate sheets, and the calculation of costs.

ABR 110—AUTO BODY POWER TOOLS

3 Credits
Diagnoses problems associated with the use of power tools in auto body work.

ABR 111—AUTO BODY HAND/HYDRAULIC TOOLS

3 Credits
The selection, use, and maintenance of hand tools for auto body repair.

ABR 112—BASIC BODY FUNDAMENTALS PRACTICUM

1 Credit
Provide students with the opportunity to develop skills and knowledge in the area of basic body fundamentals.

ABR 113—BASIC BODY APPLICATION PRACTICUM

1 Credit
Provides students with opportunities to develop skills and knowledge in the area of basic body application.

ABR 114—COLLISION DAMAGE ANALYSIS AND REPAIR PRACTICUM

1 Credit
Provides opportunities to develop skills and knowledge in the area of collision damage analysis and repair.

ABR 115—AUTOMOTIVE CHASSIS AND ACCESSORY CIRCUITS

3 Credits
Fundamentals of electrical theory, automotive components and circuits, and troubleshooting techniques. Emphasizes battery construction, function, and operation.

ABR 116—SUSPENSION AND ALIGNMENT FOR AUTO BODY

3 Credits
Covers suspension and steering parts of an automobile

and the theory of wheel alignment and wheel balance. Five wheel alignment angles, steering wheel positioning, vehicle tracking, and wheel balancing.

ABR 117—AUTO PAINT FUNDAMENTALS PRACTICUM

1 Credit
Develops auto painting with emphasis on materials and equipment handling.

ABR 118—AUTOMOTIVE UPHOLSTERING

2 Credits
Techniques of automobile interior refinishing. Includes study of spring construction, filling, and fabrics. Develops manipulative skills through practice projects on seats, panels, and arm rests.

ABR 119—GLASS INSTALLATION

3 Credits
Examines different types of automobile glass and their uses. Removal and installation of front or rear glass. Install and adjust side glass, bond the rear view mirror support, and use rubber channel and synthetic rubber adhesive.

ABR 120—FIBERGLASS/PLASTIC REPAIR

3 Credits
Introduces types of fiberglass and plastic materials used in auto body repair. Covers both interior and exterior applications.

ABR 121—UNIBODY STRUCTURAL ANALYSIS AND REPAIR PRACTICUM

1 Credit
Development of skills and knowledge in the area of unibody structural analysis and repair.

ARB 281-293—SPECIAL TOPICS IN AUTOMOTIVE BODY REPAIR TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

AUTOMOTIVE SERVICE TECHNOLOGY

The well trained automotive service technician is in great demand because of the complexity of modern vehicles and society's transportation needs. Employment in the transportation industry may be found in a franchise automotive business, independent automotive repair centers, tire stores, service stations, leasing companies and government service centers. Some graduates may choose to become self-employed. Additional opportunities for employment are available in related areas such as recreational vehicles, off-highway equipment, insurance business and parts and services.

Automotive Service Technology is a four semester program requiring 69 credits that leads to an Associate in Applied Science Degree. Technical Certificates are also avaliable in specialized areas. The program offers course work in chassis and suspension; two and four wheel alignment; braking systems; electrical fundamentals and electronic system; carburetor and electronic fuel injection; tune-up; engine rebuild and air conditioning. Classroom lectures are combined with laboratory experiences where students gain diagnostic and service skills.

The program is offered in Gary, South Bend, Fort Wayne, Lafayette, Kokomo, Muncie, Columbus, Madison, Terre Haute, Indianapolis, Richmond, Evansville, and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (51 Credits)

Prefix	No.	Title	Semester Credits
AST	101	Chassis/Suspension Principles	3
AST	102	Two/Four Wheel Alignment	3
AST	104	Start and Charge Systems	3
AST	105	Fuel Systems	3
AST	106	Electronic Ignition Systems	3
AST	107	Engine Principles and Design	3
AST	108	Electrical Accessory Systems	3
ELT	113	Basic Electricity	3
AST	201	Heating and A/C Principles	3
AST	202	Computer Engine Controls	3
AST	203	Engine Rebuild	3
AST	204	Automatic Transmission/Transaxle	3
AST	205	Manual Transmission/Transaxle	3
AST	206	Heating and A/C Service and Repair	3
AST	207	Engine Performance	3
AST	208	Differentials/Drivelines	3
AST	209	Automotive Braking Systems	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
SOC	101	Human Relations	3
MAT	101	Algebra I	3
MAT	XXX	Math/Elective	3
SCI	101	Physical Science	3
		Total Credits	69

AUTOMOTIVE SERVICE TECHNOLOGY COURSE DESCRIPTIONS

AST 101—CHASSIS/SUSPENSION PRINCIPLES

3 Credits
Various frame designs and suspension systems used in modern vehicles are explained in this course. Repair and replacement of steering linkages and chassis components, both front and rear is included.

AST 102—TWO/FOUR WHEEL ALIGNMENT

3 Credits
Investigates principles of two and four wheel alignment and wheel balance. Emphasis in the lab is on practical work experience covering all the alignment angles.

AST 104—START AND CHARGE SYSTEMS

3 Credits
An intensive study of the construction, function and principles of operation of starting motors, charging systems and their control systems with emphasis on diagnosis and bench repair.

AST 105—FUEL SYSTEMS

3 Credits
Study of automotive fuel systems: single, double, and four barrel carburetor and fuel injection systems. Emission controls as they apply to the fuel system. Focuses on shop procedures for trouble shooting, servicing, replacing or overhauling fuel system and emission control components.

AST 106—ELECTRONIC IGNITION SYSTEMS

3 Credits
Introductory course covering basic principles of electronic ignition systems. Includes functions and testing of the conventional breaker point ignition.

AST 107—ENGINE PRINCIPLES AND DESIGN

3 Credits
Examines engine dynamics, theory of engine operation and design characteristics of all engine assemblies and sub assemblies. Also covers the removal, tear down, visual inspection, precision measuring inspection and cleanup of components and parts and rebuilding engines according to industry standards.

AST 108—ELECTRICAL ACCESSORY SYSTEMS

3 Credits
The function, construction, principles of operation, and troubleshooting techniques for various accessories of automotive vehicles. Includes electrical accessories: windshield wipers and washers, power seats, power windows, adjustable steering wheels, power tailgates and headlights.

AST 109—SMALL GAS ENGINE MAINTENANCE

2 Credits
Theory, service and repair of small gas engines and their components; emphasizing safety, measurements, lubricants, fuels and engine design.

AST 110—SMALL GAS ENGINE OVERHAUL

2 Credits
Covers disassembly, inspection, measuring, cleaning, machine repair and proper assembly techniques applicable to small gas engine overhaul. Includes carburetor overhaul, ignition system overhaul and maintenance procedures on rebuilt two-cycle and four-cycle engines.

AST 111—BASIC AUTO CARE

2 Credits
Basic instruction in auto maintenance for the automobile owner. Covers routine maintenance, economical operation, elimination of objectionable noises, care of interior and exterior appearance, warranty regulations and emergency road procedures.

AST 113—AUTOMOTIVE DIESEL ENGINE THEORY

3 Credits
Operation of the diesel engine and differences between a diesel and gas engine. Also includes instruction on shop equipment, fuels, oils, seals, bearings, lubrication and cooling system.

AST 114—SERVICE ORGANIZATION AND PARTS

2 Credits
Facility and personnel requirements for efficiently run parts and service departments. Emphasis is on principles, practices and procedures necessary to effectively operate the departments. Includes: manufacturers' catalogs and components numbering systems, methods of scheduling time and techniques for obtaining maximum work efficiency from technicians and specialists.

AST 201—HEATING AND A/C PRINCIPLES

3 Credits
An in-depth study of automotive air conditioning and

heating. Special emphasis on the operation and theory of the air conditioning and its components. Vacuum and electrical control circuits are included.

AST 202—COMPUTER ENGINE CONTROLS

3 Credits
Examines computerized ignition, carburetor, fuel injection and sensors for engine controls on late model passenger cars. Covers theory, diagnostic procedure and repair procedure of the command control, MCU, EEC IV, lean burn and other spark control systems.

AST 203—ENGINE REBUILD

3 Credits
Precision machines, precision tools and equipment are needed for rebuilding today's modern engine. Their repair, proper assembly and installation techniques applicable to the modern engine are included.

AST 204—AUTOMATIC TRANSMISSION/ TRANSAXLE

3 Credits
A lecture and laboratory course dealing with construction, functions and principles of operation. Emphasizes practical work experience in the lab where students overhaul automatic transmissions and transaxle assemblies in the lab.

AST 205—MANUAL TRANSMISSION/TRANSAXLE

3 Credits
Theory and overhaul procedures related to the manual transmission/transaxle: clutches and transfer cases; diagnosing and overhauling the manual power train.

AST 206—HEATING AND AIR CONDITIONING SERVICE AND REPAIR

3 Credits
Covers diagnosis, service and repair procedures for the heating/air conditioning system. Includes replacement and overhaul procedures for components related to heating/air conditioning system.

AST 207—ENGINE PERFORMANCE

3 Credits
An advanced course in the theory, diagnosis, and repair of computer controlled ignition systems and fuel systems on late model vehicles, using state-of-the-art diagnostic equipment. Emphasis is on recommended manufacturer methods for servicing the computer controlled ignition system.

AST 208—DIFFERENTIALS/DRIVELINES

3 Credits
A study of differential and driveline theory and overhaul. Includes overhaul and service procedures applicable to gear sets, bearings and seals. Theory and overhaul procedures related to the driveshaft and axle assemblies for front and rear wheel drive vehicles is included.

AST 209—AUTOMOTIVE BRAKING SYSTEMS

3 Credits
Theory, service and repair of automotive braking systems and their components. Emphasis on hydraulic theory and repair and service of booster units, master cylinder, wheel cylinder, caliper rebuilds, and drum and rotor service.

AST 210—MODIFIED AUTOMOTIVE ENGINES

3 Credits
This course is offered for advanced transportation students and employed technicians to familiarize participants with higher performance engines, durability and economy. Stresses individuality in constructing performance engines.

AST 211—AUTOMOTIVE DIESEL ENGINE OVERHAUL

3 Credits
Identification of the components that comprise an automotive diesel engine, and operational theory of the automotive diesel engine. Includes overhaul procedures applicable to an automotive diesel engine.

AST 212—COMPREHENSIVE DIAGNOSIS I

2 Credits
Diagnosing and repairing the complete automotive system according to manufacturers recommendations and specifications. Students will complete repair orders as assigned by the instructor.

AST 213—COMPREHENSIVE DIAGNOSIS II

2 Credits
Students complete work based on flat rate hours. Also includes record keeping, parts procurement and methods for determining unpaid labor lost on flat rate.

AST 281-293—SPECIAL TOPICS IN AUTOMOTIVE SERVICE TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

BARBERING TECHNOLOGY

The Barbering Technology program is designed to provide individuals with the background and expertise needed to establish themselves in a barbering/hairstyling career.

Courses contain basic history and ethics of the profession, basic haircutting, shampooing, bacteriology, sterilization and sanitation. Additional courses include the art of shaving, perming, coloring, processing, and additional work with hairstyling. Shop management, advanced haircutting and a combined techniques course complete the course work.

This three semester and one summer session program, requiring 65 credits, leads to a Technical Certificate and qualifies a student to take the state administered licensing test.

The program is offered at the United States Penitentiary at Terre Haute.

TECHNICAL CERTIFICATE PROGRAM

Technical Courses (65 Credits)

Prefix	No.	Title	Semester Credits
BAR	101	History and Professional Ethics of Barbering	3
BAR	102	Bacteriology, Sterilization and Sanitation	3
BAR	103	Haircutting I	3
BAR	104	Shampoo and Rinsing	3
BAR	105	Shaving	3
BAR	106	Scalp and Hair Treatment I	3
BAR	107	Scalp and Hair Treatment II	3
BAR	108	Theory of Massage and Facial Treatment	3
BAR	109	Basic Chemistry	3
BAR	110	Barbering Anatomy and Physiology	3
BAR	111	Hair Styling I	3
BAR	112	Advanced Haircutting	3
BAR	113	Chemical Hair Processing	3
BAR	114	Hair Coloring	3
BAR	115	Waving Techniques	3
BAR	116	Permanent Waving	3
BAR	117	Shop Management	3
BAR	118	Hair Styling II	3
BAR	119	Combined Techniques Shop Application	2
BAR	120	Haircutting II	3
BAR	121	Haircutting III	3
BAR	122	Sales Techniques	3
		Total Credits	65

BARBERING TECHNOLOGY COURSE DESCRIPTIONS

BAR 101—HISTORY AND PROFESSIONAL ETHICS OF BARBERING

3 Credits
Includes the origin of the barber; Greek, Roman and English influence on barbering and modern trends. Includes the ethical conduct and standards of the barbering profession.

BAR 102—BACTERIOLOGY, STERILIZATION AND SANITATION

3 Credits
Examines types of bacteria and their relationship to barbering. Emphasizes the sterilization and sanitation of barbering implements and facilities.

BAR 103—HAIRCUTTING I

3 Credits
An introductory course in haircutting: surveying implements and their correct usages.

BAR 104—SHAMPOOING AND RINSING

3 Credits
Deals with the benefits of proper shampooing and rinsing. Techniques for preparing the patron, selecting the shampoo and performing the services.

BAR 105—SHAVING

3 Credits
Develops the techniques of honing and stropping a straight razor, and the fundamentals of shaving. Includes fundamentals and techniques of styling mustaches and beards and identifying various styles, cutting and shaping of mustaches and beards.

BAR 106—SCALP AND HAIR TREATMENT I

3 Credits
The study of the skin, scalp, and hair: functions, purposes and problems. Examines need for scalp and hair treatments, and different types of treatments.

BAR 107—SCALP AND HAIR TREATMENT II

3 Credits
Focuses on common names and terms, the nature, effects and safe use of high frequency current for therapy purposes and how and when to perform light therapy.

BAR 108—THEORY OF MASSAGE AND FACIAL TREATMENT

3 Credits
Theory of applications in massage treatment. Skill development in massage movements of face and scalp. Includes different types of facials, supplies required and proper steps in the selection of products and performance of facials.

BAR 109—BASIC CHEMISTRY

3 Credits
Basic fundamentals of chemistry as applied to Barbering: composition and chemical effects of barbering supplies.

BAR 110—BARBERING ANATOMY AND PHYSIOLOGY

3 Credits
Basic study of the physiology of the cell, tissue, organs and systems, and their interrelationships in the human organism.

BAR 111—HAIR STYLING I

3 Credits
Surveys various cutting patterns, correct balance, height in styling and selecting correct styles for patrons.

BAR 112—ADVANCED HAIRCUTTING

3 Credits
Includes basic hairstyling, razor and comb techniques, hair sectioning, wet or dry cutting, and other advanced techniques.

BAR 113—CHEMICAL HAIR PROCESSING

3 Credits
The fundamentals, techniques and terminology of straightening and problems associated with chemical hair processing.

BAR 114—HAIR COLORING

3 Credits
Surveys various methods of hair coloring, product knowledge, haircoloring procedures, and lightening and bleaching procedures.

BAR 115—WAVING TECHNIQUES

3 Credits
Techniques of waving hair including fingerwaving and heat waving.

BAR 116—PERMANENT WAVING

3 Credits
Examines processes, techniques and materials for permanent hair waving.

BAR 117—SHOP MANAGEMENT

3 Credits
Techniques for establishing a barbershop: record keeping, personnel management, supply management and public relations.

BAR 118—HAIR STYLING II

3 Credits
Modern day styles and cutting techniques for their achievement.

BAR 119—COMBINED TECHNIQUES SHOP APPLICATION

2 Credits
Students are expected to perform any of the tasks that have been assigned in the entire program with at least 75 percent accuracy and efficiency.

BAR 120—HAIRCUTTING II

3 Credits
Provides laboratory practice in the art of haircutting in preparation for the state licensing examination.

BAR 121—HAIRCUTTING III

3 Credits
Additional laboratory practice in preparation for the state licensing examination.

BAR 122—SALES TECHNIQUE

3 Credits
Provides an overview of selling and selling skills, including the work of the salesperson. Considers the psychology of selling and develops selling skills through a series of practical situations.

BAR 150—INTRODUCTION TO COSMETOLOGY

3 Credits
Includes theory of long hair graphics, haircutting, roller and pincurl placements, blow dry and ironing, line and design, chemical services (perms, chemical relaxers, hair coloring) and skin care.

BAR 151—COSMETOLOGY I

2 Credits
Covers hair color, hair related disorders, thermal hair straightening, manicuring, hair shaping and hair styling.

BAR 152—COSMETOLOGY LABORATORY I

5 Credits
Provides for practical applications of long hair graphics, haircutting, roller and pincurl placements, blow dry and ironing, line and design and chemical services.

BAR 153—COSMETOLOGY LABORATORY II

2 Credits
Application of hair color, hair shaping, hair styling, manicuring, thermal hair straightening and thermal waving are covered.

BAR 154—COSMETOLOGY CLINIC I

3 Credits
Practical applications of hair cutting, blow dry and ironing, permanent waving, facials, hair coloring, wigs, manicuring and hair relaxing are provided.

BAR 155—COSMETOLOGY II

4 Credits
Written and practical review of hair color, hair-related disorders, thermal hair graphics, haircutting, roller and pincurl placements, blow dry and ironing, line and design, chemical services and skin care in preparation for prestate examination.

BAR 158—COSMETOLOGY LAB V

2 Credits
Advanced training and application of manicuring, nail application, color techniques including bleaching and tinting, finger waving, skin care and make up techniques.

BAR 161—COSMETOLOGY CLINIC IV

4 Credits
Practical application of haircutting, blow dry and ironing, permanent waving, facials, hair coloring, wigs, manicuring and hair relaxing.

BAR 162—COSMETOLOGY CLINIC V

5 Credits
Practical application of haircutting, blow dry and ironing, permanent waving, facials, hair coloring, wigs, manicuring and hair relaxing.

BAR 163—COSMETOLOGY CLINIC VI

2 Credits
Practical applicaton of haircutting, blow dry and ironing, permanent waving, facials, hair coloring, wigs, manicuring and hair relaxing.

BAR 281-293—SPECIAL TOPICS IN BARBERING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

BUILDING CONSTRUCTION TECHNOLOGY

The Building Construction Technology program develops skilled technicians in one of several specialties within the building construction industry. Included in the program are courses in cabinetry, carpentry, electrical wiring, masonry, plumbing, heating, air conditioning, refrigeration, blueprint reading, and the use of tools and materials. The flexibility of the program allows students to pursue a full course of study or to take courses only as needed to update skills.

A two-year program, requiring 60 semester hours leads to the Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. Programs are offered at Fort Wayne, Kokomo, Muncie, Richmond and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (36 Credits)

Prefix	No.	Title	Semester Credits
BCT	101	Introduction to Carpentry	3
BCT	102	Construction Materials	3
BCT	104	Floor and Wall Layout and Construction	3
BCT	105	Roof Construction	3
BCT	106	Construction Blueprint Reading I	3
IMT	121	Industrial Safety	3
BCT	201	Residential Wiring	3
BCT	202	Plumbing Fundamentals	3
BCT	203	Masonry Concrete Fundamentals	3
BCT	204	Construction Estimating and Specifications	3
ACC	101	Accounting Principles I	3
BUS	102	Business Law	3

General Education Requirements (12 Credits)

ENG	101	English Composition	3
SOC	101	Human Relations	3
MAT	101	Algebra I	3
INF	101	Introduction to Microcomputers	3

Regional Electives (12 Credits) 12

Total Semester Credits 60

BUILDING CONSTRUCTION TECHNOLOGY COURSE DESCRIPTIONS

BCT 101—INTRODUCTION TO CARPENTRY

3 Credits
Introductory course for Building Construction Technology. Presents history of building construction to present day applications emphasizing future trends and construction as a career. Provides practice in the operation, maintenance and safety of various tools including the builder's level and transit.

BCT 102—CONSTRUCTION MATERIALS

3 Credits
Develops skills in identifying building materials commonly used in modern building construction. The student gains experience in the application of locally accessible materials.

BCT 104—FLOOR AND WALL LAYOUT AND CONSTRUCTION

3 Credits
Examines the design and construction of floor and wall systems. Develops skills needed for layout and construction of floor and wall systems from blueprints and professional planning.

BCT 105—ROOF CONSTRUCTION

3 Credits
Study of the design and construction of roof systems. Emphasizes use of the framing square for traditional rafter and truss roofing. Preparing students in additional up-to-date techniques.

BCT 106—CONSTRUCTION BLUEPRINT READING I

3 Credits
Instruction and practice in the use of working drawings and applications from the "print" to the "work". Units include: relationship of views and details, interpretation of dimension; transposing scale, tolerances, electrical symbols, sections, material list, architectural plans, room schedules, and plot plans.

BCT 107—FURNITURE DESIGN AND CONSTRUCTION

3 Credits
Develops skills in the design, layout, and construction of furniture. Students are introduced to furniture styles, types of materials used, and methods of construction.

BCT 108—CABINETRY FABRICATION TECHNIQUE

3 Credits
Develops skills in the design, lay out, and construction of cabinets. Students will lay out and fabricate faceplates and cases for cabinets.

BCT 109—FURNITURE REFINISHING AND REPAIR

3 Credits
Develops knowledge and skills in the technology of refinishing and repairing furniture. Introduction to proper procedures used in stripping, bleaching, caning, veneering, and various types of wood fillers.

BCT 110—CABINETRY

3 Credits
Introduction to basic skills and technology of cabinetmaking, focusing on cabinet design and layout, terminology, tools, and skill requirements.

BCT 111—WOODWORKING FUNDAMENTALS

3 Credits
Introduction to basic skills and technology of woodworking, focusing on tool and machine operations. Students instructed in proper jointry and material selection.

BCT 112—MILLWORK

3 Credits
Basic skills and technology of the production of wood products, focusing on machinery setup and operations, for making moldings, door frames, picture frames, etc.

BCT 113—CABINETRY/FURNITURE DOOR AND DRAWER ASSEMBLY

3 Credits
Develops skills in the design, layout, and construction of cabinet/furniture doors, drawers, and counter tops. Various types of hardware and installation methods are introduced.

BCT 114—EXTERIOR TRIM

3 Credits
The focus of this course is to develop necessary skills in the finishing of the exterior of a building. The student obtains skills in the installation of the cornice, windows, doors and various types of sidings used in today's market place.

BCT 115—AUXILIARY BUILDING DESIGN AND CONSTRUCTION

3 Credits
Develops carpentry skills in construction of garages, storage barns, wood decks and patios, privacy fences, and gazebos.

BCT 201—RESIDENTIAL WIRING

3 Credits
Covers the practice of residential wiring, including electrical service, metering equipment, lighting, switches, outlets, and other common components. Also includes methods of installation and maintenance of the residential wiring system in accordance with the current National Electrical Code.

BCT 202—PLUMBING FUNDAMENTALS

3 Credits
The operation and function of home plumbing systems. Introduces pipe drawings, isometric pipe layout and blueprint symbols. Roughing in plumbing and installing drainage, water systems, fixtures, and water heaters in compliance with the plumbing code.

BCT 203—MASONRY CONCRETE FUNDAMENTALS

3 Credits
Materials and methods of construction with concrete block, brick and forming for poured concrete. Includes study in preparation of the building site.

BCT 204—CONSTRUCTION ESTIMATING & SPECIFICATIONS

3 Credits
Deals with the estimating process for residential construction. Emphasis on reading blueprints and specifications, also labor and material take-off and pricing.

BCT 205—ADVANCED PROJECTS IN BUILDING CONSTRUCTION I

3 Credits
Problem-solving applied to common problems in construction. Emphasis is on the cooperation between several trades in the construction industry. Application of skills needed to resolve the problem.

BCT 206—ADVANCED PROJECTS IN BUILDING CONSTRUCTION II

3 Credits
Problem-solving applied to common problems in construction. Emphasis is on the cooperation between several trades in the construction industry allowing the student to practice necessary skills to resolve the problem. Concentrates on decision-making skills.

BCT 207—CARPENTRY-LIGHT COMMERCIAL

3 Credits
Introduces carpentry skills required in light commercial construction. Focuses on construction methods and materials used for office buildings, clinics, small churches, and other nonresidential structures.

BCT 208—PROJECT PLANNING AND PRODUCTION

3 Credits
Provides opportunity for the students to develop knowledge and skills under limited supervision in the design, selection of materials, project planning and production systems used in the fabrication of cabinets and furniture.

BCT 209—REMODELING AND ADDITIONS

3 Credits
Covers all the aspects of light commercial and residential remodeling and restoration. Problems of financing, permits, utilities and construction will be considered. The student will differentiate between new construction and remodeling for future reference in estimating and bidding work.

BCT 210—VINYL AND ALUMINUM SIDING APPLICATIONS

3 Credits
In-depth examination of common and unusual problems encountered by a vinyl and aluminum siding applicator on both new jobs and existing structures. Includes sidings, soffit, fascia, rain gutter, and covering of trims and windows. Emphasis is on actual installation, covering a wide variety of experiences. Also covers standing seam and corrugated metal roofing, metal carports, awnings, metal storage buildings, ventilators and flashings.

BCT 211—CONSTRUCTION ORGANIZATION AND PROCEDURES

3 Credits
Introduction to organization and management procedures focusing on subcontracting, equipment/tool inventories, job materials, codes, inspections and permits.

BCT 212—CONSTRUCTION BLUEPRINT READING II

3 Credits
Designed to develop proficiency in the interpretation of complex blueprints, including notations, conventional symbols, and dimensions. Introduction to basic architectural drafting skills.

BCT 213—MOTOR AND MOTOR CONTROLS

3 Credits
Basic study in wiring and design of motor control circuits including circuit and conductor calculations, motor circuits and controls. Also control transformers and service and circuit layout for motor control and machine tool hookup and control.

BCT 214—WALL AND FLOOR COVERINGS

3 Credits
Modern materials and techniques of interior floor and wall coverings; instruction on how to assess the durability and maintenance of the materials, and techniques in correct installation procedures.

BCT 215—BASIC THEORY OF PAINT AND STAIN

3 Credits
Introduces the basic skills and techniques of finishing wood produces with emphasis on proper preparation, staining, and finishing procedures.

BCT 216—ADVANCED RESIDENTIAL DESIGN

3 Credits
Study of residential floor plans and elevations. Analysis of contemporary living patterns, cost, privacy, convenience, and efficiency, coordinated with needs. Exterior styles are compared for cost and aesthetic values. Multiple housing, duplex arrangements, apartments and condominiums. Floor plans, elevations, and perspective drawing will be made to incorporate the conclusions reached from the above research.

BCT 217—PLUMBING MECHANICAL INSTALLATION

3 Credits
Develops skills in the use of plumbing equipment. Covers residential and commercial installations troubleshooting, services, and repair in conformance with codes.

BCT 218—COMMERCIAL PLUMBING INSTALLATIONS AND ESTIMATING

3 Credits
Offers in-depth study of commercial plumbing with emphasis on code requirements and commercial blueprints. Instruction in cost estimation for a complete plumbing system.

BCT 219—SURVEY AND MEASUREMENT

3 Credits
Fundamentals of surveying, including use of the transit, reading angles, land descriptions, restrictions, and legal problems. Covers topographical maps and their uses.

BCT 220—ELECTRICAL TROUBLESHOOTING TECHNIQUES

3 Credits
Methods and techniques for troubleshooting appliances, motors, motor controls, relay wiring, residential wiring, commercial wiring, and industrial wiring systems.

BCT 221—INTERIOR TRIM

3 Credits
Students will develop basic knowledge, skill, and awareness of interior trim. Drywall, moldings, interior doors, kitchen cabinets, and baseboard moldings will be installed by the student.

BCT 222—COMMERCIAL—INDUSTRIAL WIRING

3 Credits
Wiring methods and material selection for commercial and industrial wiring systems. Includes mechanical installation of hardware, as well as electrical design, layout, and installation. Emphasis is on tool use, material selection and installation.

BCT 223—PLUMBING DESIGN AND INSTALLATION

3 Credits
Provides techniques for working with pipes and fittings. Covers residential and commercial electric hot water heating systems, private well water systems, and electrical components of plumbing systems.

BCT 224—ENERGY CONSERVATION TECHNIQUES

3 Credits
Offers an in-depth study of the many energy conservation techniques currently being applied and developed. Covers new materials, construction concepts, and alternative approaches being developed to reduce energy consumption.

BCT 225—FABRICATION

3 Credits
Study of the concepts and techniques of industrialized housing. Covers prefabrication, jigs and rigging, including mobile homes, sectional homes and modular homes.

BCT 226—CONSTRUCTION SUPERVISORY TRAINING

3 Credits
Examines the duties and responsibilities of the supervisor of a construction crew. Develops the leadership abilities and techniques necessary to deal with special problems in daily construction work. Gives attention to adjusting to the role of supervisor and indicates what is expected from each member of the crew.

BCT 281-293—SPECIAL TOPICS IN BUILDING CONSTRUCTION TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

COLLEGE/INDUSTRY JOB TITLE TRAINING

The College/Industry Job Title Training program provides linkage between Ivy Tech and business and industry. Students who enroll in this program are provided with a combination of academic instruction in the College and specific skill training at the job site. Student programs are individualized and tailored to the needs of the employer and student. A Technical Certificate is awarded following completion.

The technical level of training appropriate to the program will require curriculum offerings that encompass three areas of preparation. They are:

Technical Concentrate—Those skills and knowledge that are unique and required in order to successfully perform a specific technical job.

Technical Related—Those fundamental technical principles which support the development of skills in the Technical Concentrate area.

Basic Related—Those basic or general knowledge concepts that enable the student to develop knowledge and skills in the Technical Related and Technical Concentrate areas.

The program is conducted through the College's Business and Industry Training Division and interested students should contact this office. Programs are offered in Lafayette and Terre Haute.

DIESEL POWER TECHNOLOGY

The Diesel Power Technology program develops technicians who service, maintain and repair heavy and medium duty motor trucks. The program includes instruction in preventive maintenance including testing, diagnosing, adjusting, tuning and overhauling of diesel engines as well as other units of heavy and medium duty trucks. Courses are offered in transmission, differentials, brakes, air conditioning, electrical repair, hydraulics, fuel and suspension systems. Students are given practical experience with hands on training.

A two year program requiring 69 credits leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. The program is offered in Lafayette.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (39 Credits)

Prefix	No.	Title	Semester Credits
DPT	101	Diesel Engine Removal and Replacement	3
DPT	103	Hydraulics	3
DPT	104	Diesel Fuel System I	3
DPT	105	Mobile Air Conditioning and Refrigeration	3
DPT	106	Heavy Duty Power Trains	3
IMT	104	Fluid Power Basics	3
DPT	201	Diesel Overhaul I	3
DPT	202	Diesel Fuel System II	3
DPT	203	Heavy Duty Chassis and Alignment	3
DPT	204	Heavy Duty Brake Systems	3
DPT	205	Diesel Overhaul II	3
DPT	206	Diesel Engine Tune-Up	3
DPT	207	Diesel Engine Diagnosis	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I	3
MAT	107	Math of Finance	3
SOC	101	Human Relations	3
SCI	101	Physical Science	3

Regional Electives (12 Credits) 12

Total Credits 69

DIESEL POWER TECHNOLOGY COURSE DESCRIPTIONS

DPT 101—DIESEL ENGINE REMOVAL & REPLACEMENT

3 Credits
Covers procedures for removal and replacement of diesel engines in motor trucks and farm and industrial equipment. Hands-on experience with emphasis on identifying and removing and replacing hoses and wiring.

DPT 103—HYDRAULICS

3 Credits
Advanced principles and functions of fluid power and terminology and symbols pertaining to hydraulics and pneumatics. Emphasis is on system design, fabrication, diagnosis repair, maintenance and testing. Examines the role of fluid power (hydraulic/pneumatic) in medium and heavy duty trucks in the form of air compressors, air tanks, gov. power steering units, hydraulic lifts, and other related fluid power units.

DPT 104—DIESEL FUEL SYSTEM I

3 Credits
Covers theory of operation of diesel engines and introduces types of fuel systems and how they work. Includes the various combustion chambers used in industrial and agricultural engines.

DPT 105—MOBILE A/C AND REFRIGERATION

3 Credits
Theory of operation and function of components, includes diagnosis, repair and replacement of various components in mobile air conditioning units and refrigeration units.

DPT 106—HEAVY DUTY POWER TRAINS

3 Credits
Deals with the design, function, operation, diagnosis, repair and testing of heavy duty clutches and manual transmissions. Heavy duty drive lines, differentials and rear axle assemblies with emphasis on hands-on overhaul and repair. Also covers automatic transmissions used in medium and heavy duty trucks.

DPT 201—DIESEL OVERHAUL I

3 Credits
The construction and operation of two and four cycle diesel engines with valves, sleeves and bearings and the measurement of clearances. Includes the building of a non-running diesel engine in the laboratory.

DPT 202—DIESEL FUEL SYSTEM II

3 Credits
Modern fuel injection systems in both 2 and 4 cycle engines with emphasis on laboratory work of the disassembly, inspection, repair and testing of diesel fuel systems and components.

DPT 203—HEAVY DUTY CHASSIS AND ALIGNMENT

3 Credits
Covers heavy duty truck frame designs and suspension components including springs, tandem axles with air suspension, shock absorbers and other related components. Also considers front axles, king pins, steering linkage, steering gears and alignment of wheels and frames.

DPT 204—HEAVY DUTY BRAKE SYSTEMS

3 Credits
Hands-on experience with heavy and medium duty trucks, air and hydraulic brake cylinder, hydrovacs, brake shoes and linings with emphasis on diagnosis and repair of brake problems.

DPT 205—DIESEL OVERHAUL II

3 Credits
The disassembly and inspection of the running diesel engine. Includes the use of manufacturers service manuals and special tools and equipment. Emphasizes importance of careful measurements and adherence to specifications.

DPT 206—DIESEL ENGINE TUNE-UP

3 Credits
Instruction in performing tune-ups and servicing diesel engines. Laboratory work includes removal and testing of nozzles and injectors, timing of injection pumps, adjustment of valves and injectors, and general service connected with improvement of performance in a diesel engine.

DPT 207—DIESEL ENGINE DIAGNOSIS

3 Credits
Considers the malfunction and correction of problems associated with the operation of domestic diesel engines. Laboratory work includes diagnosing fuel systems, starting, and internal engine problems.

DPT 281-293—SPECIAL TOPICS IN DIESEL POWER TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

DRAFTING/CAD TECHNOLOGY

The Drafting/CAD program reflects state of the art technology using Computer-Aided Drafting (CAD) equipment. This equipment, along with the traditional methods of drafting, provides students with necessary skills to be competitive in the job market. The program is designed to provide the student with two areas within which to minor; one in Mechanical and one in Architectural Drafting. These two disciplines have common areas of study that develop a working knowledge used within the building and manufacturing industries.

A two-year course, requiring completion of 64 credits, leads to an Associate in Applied Science degree. Technical Certificates are also available in specialized areas. Programs are offered at Bloomington, Columbus, Elkhart, Evansville, Fort Wayne, Gary, Indianapolis, Kokomo, Lafayette, Logansport, Muncie, South Bend, Sellersburg, Terre Haute and Valparaiso.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM (Pending Approval)

Technical Courses (27 Credits)

Prefix	No.	Title	Semester Credits
DCT	102	Technical Graphics	3
DCT	103	CAD Fundamentals	3
DCT	104	Product Drafting	3
DCT	105	Facilities Design and Layout	3
DCT	106	Descriptive Geometry	3
DCT	107	Advanced CAD	3
DCT	202	CAD Programming Language	3
DCT	203	Statics and Strength of Materials	3
DCT	217	Product Design	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
MAT	101	Algebra I	3
MAT	103	Geometry/Trigonometry	3
SOC	101	Human Relations	3
SCI	103	Physics I	3
ENG	201	Technical Writing	3

Regional Electives (19 Credits) 19

To be selected from Architectural or Mechanical Courses listed below:

Architectural Drafting

DCT	108	Residential Drafting
DCT	109	Construction Materials and Specifications
DCT	110	Architectural Rendering
DCT	201	Schematic Drafting
DCT	204	Architectural CAD
DCT	206	Mechanical and Electrical Equipment

Mechanical Drafting

AMT	101	Manufacturing Processes
DCT	201	Schematic Drafting
DCT	205	Introduction to Plastics
DCT	207	Die Design Drafting
DCT	214	Machine Design
DCT	215	Electronic Drafting/CAD
DCT	216	Jig and Fixture Design
DCT	218	CAD/CAM Design

Architectural Drafting Cont.

DCT	208	Structural Detailing
DCT	209	Estimating/CAD
DCT	210	Surveying
DCT	211	Commercial Structures I
DCT	212	Commercial Structures II
DCT	213	CAD Mapping
DCT	281-293	Special Topics in Drafting/CAD Technology (1-5 Credits)

Mechanical Drafting Cont.

DCT	219	Machine Tool Operations
DCT	281-293	Special Topics in Drafting/CAD Technology (1-5 Credits)

Total Credits 64

DRAFTING/CAD TECHNOLOGY COURSE DESCRIPTIONS ASSOCIATE OF APPLIED SCIENCE

DCT 101—BASIC DRAFTING

3 Credits
This is an introductory course in mechanical drafting for students who have had no previous drafting experience or who wish to review basic drafting techniques.

DCT 102—TECHNICAL GRAPHICS

3 Credits
An introductory course which strengthens basic drafting skills to a proficient, technician level. Areas of study include geometric constructions, orthographic projections with auxiliary views, dimensioning, sectioning, and introductory tolerancing. Other areas of study are isometric and oblique views of parts.

DCT 103—CAD FUNDAMENTALS

3 Credits
This course will introduce the student to the fundamentals of CAD (Computer-Aided Drafting). Topics covered will be: CAD Overview; System; Software; The Use of CAD Systems in Creating Geometry; Screen Control; and Plotting.

DCT 104—PRODUCT DRAFTING

3 Credits
An introduction to the "set" concept of working drawings both in detailing and assembly. Fastening devices, thread symbols and nomenclature, surface texture symbols, classes of fits, and the use of parts lists, titles, and revision blocks are presented. The basics of product design and the design process will be introduced.

DCT 105—FACILITIES DESIGN AND LAYOUT

3 Credits
Focuses on the various aspects of building construction, structural applications, space planning and traffic flow analysis. Presentation drawings and working drawings are a part of this course.

DCT 106—DESCRIPTIVE GEOMETRY

3 Credits
This course introduces fundamental principles in developing graphical solutions to engineering problems. Many of the topics covered in this course will lend itself to sheet metal developments, transition pieces, and bend allowances.

DCT 107—ADVANCED CAD

3 Credits
This course is designed to instruct students in fundamentals of 3-D modeling for design. Topics covered will be: Overview of Modeling; Graphic Manipulation; Part Structuring; Coordinate Systems; and Developing Strategy of Model Geometry.

DCT 108—RESIDENTIAL DRAFTING

3 Credits
This is a basic course covering residential planning and drafting. Areas of study will be interior planning, structural design, and development of a working drawing. The student will design a residence from information given in class using accepted building standards.

DCT 109—CONSTRUCTION MATERIALS AND SPECIFICATIONS

3 Credits
This course will introduce the student to the different construction materials, their composition and application. Specifications of materials, construction contracts and application required in the building industry is studied.

DCT 110—ARCHITECTURAL RENDERING

3 Credits
Presents a survey and history of pictorial drawings. Studies light and color, rendering media, and application of different techniques and media through a series of exercises.

DCT 201—SCHEMATIC DRAFTING

3 Credits
This course presents the systematic layout of various types of schematic drawings. Students will prepare finished drawings for the manufacture or installation of plumbing, heating, electrical, electronic and fluid-power type drawing. No attempt is made here to teach engineering design of these highly specialized areas, but the concepts of design will be covered.

DCT 202—CAD PROGRAMMING LANGUAGE

3 Credits
This course covers the use of languages to program advanced commands. A project-oriented course, with projects individualized according to students' interests.

DCT 203—STATICS AND STRENGTH OF MATERIALS

3 Credits
This course is designed to instruct the student on the fundamentals of theory and application of mechanics. Areas covered are vectors, equilibrium; application involving beams, trusses, and cables. Stress-strain relationships, axially loaded members, torsion, shear and bending moment diagrams, and deflection of beams and connections are also studied.

DCT 204—ARCHITECTURAL CAD

3 Credits
This is an advanced computer-aided course which covers Architectural Design. This course will include floor plans, details, and presentation drawings.

DCT 205—INTRODUCTION TO PLASTICS

3 Credits
Introduces the student to the major plastic processing industries, techniques and to the most widely used plastic polymers—their applications and properties.

DCT 206—MECHANICAL AND ELECTRICAL EQUIPMENT

3 Credits
This course focuses on the mechanical and electrical layout drawings required for a structure. Electrical load calculations, wire sizing, and circuits are studied. Plumbing requirements, fixture units, and pipe sizing are calculated and drawn. Heating systems, duct layout, and sizing are also a part of this course.

DCT 207—DIE DESIGN DRAFTING

3 Credits
The student studies the drafting, detailing, and design of blanking, piercing, and forming dies. Material reaction to shear, cutting clearances, and nest gauging are all a part of this course.

DCT 208—STRUCTURAL DETAILING

3 Credits
This course focuses on the detailing of commercial structural members, their connections, materials, and methods of construction. Primary areas of concentration will be the traditional materials such as reinforced concrete, masonry, steel, and timber.

DCT 209—ESTIMATING/CAD

3 Credits
A basic course which introduces estimating procedures used in the building industry. Students will study material takeoffs, estimating overhead expenses, contingencies, labor, and equipment. This course may involve the use of computers to generate takeoffs and do pricing.

DCT 210—SURVEYING

3 Credits
Introduces fundamentals of surveying, including use of the transit, reading angles, land descriptions, restrictions, and legal problems. Examines topographical maps and their uses.

DCT 211—COMMERCIAL STRUCTURES I

3 Credits
Focuses on the planning and drawing of commercial structures. Attention is directed to a presentation drawing and working drawing for concrete structures and steel structures.

DCT 212—COMMERCIAL STRUCTURES II

3 Credits
Focuses on the planning and drawing of commercial structures. Attention is directed to working drawings for pre-engineered and concrete/steel structures.

DCT 213—CAD MAPPING

3 Credits
This advanced computer-aided drafting course covers the concepts of map making. Civil engineering applications, plat mapping, and topographical mapping areas will be covered.

DCT 214—MACHINE DESIGN

3 Credits
This non-calculus course is designed to present practical solutions to mechanical design problems. The student will study the design of machine elements including shafts, bearings, keys, pins, and springs. Also the geometry and drafting of cams and gears and the study of linkages are included.

DCT 215—ELECTRONIC DRAFTING/CAD

3 Credits
This course introduces the student to electronic schematics, drill indexing, and printed circuit board design. Emphasis is on the creation and manipulation of basic symbols, connection diagrams, block and logic diagrams, including the use of figure parts and data extract. This course can be taught either as a board drafting course or as a computer-aided drafting course.

DCT 216—JIG AND FIXTURE DESIGN

3 Credits
This course introduces the process of drafting and design as applied to tooling. Emphasis is placed on tooling, locators, supports, holding devices, clearances, and design as it pertains to jig and fixtures.

DCT 218—CAD/CAM DESIGN

3 Credits
This advanced computer-aided drafting and computer-numerical control course covers the development of various machine routines. Primary areas of study will be the control of both the CNC mill and lathe. Topical areas of discussion will include material handling and robotics.

DCT 219—MACHINE TOOL OPERATIONS

3 Credits
This course is designed to teach the student to become familiar with the various machine tool operations available. The types of machines, their capabilities, limitations, set-up time, degree of accuracy, etc. will be covered in a lecture/lab (observation/some hands-on in the machine shop setting).

DCT 281-293—SPECIAL TOPICS IN DRAFTING/ CAD TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

ELECTRONICS TECHNOLOGY

The Electronics Technology program provides comprehensive instruction to prepare students for entry into a wide range of positions in the electronics field. While receiving a core of general electronics, the student has a choice of various technical electives in which to specialize in areas such as industrial electronics, digital techniques and communications systems, robotics, automotive and biological applications. Post-curriculum specialization course are also available.

Completion of the two year Electronics Technology program of 69 credits leads to an Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. Programs are offered at Gary, Hammond, Valparaiso, Elkhart, South Bend, Fort Wayne, Lafayette, Kokomo, Logansport, Anderson, Marion, Muncie, Terre Haute, Indianapolis, Connersville, Richmond, Bloomington, Columbus, Madison, Evansville and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (36 Credits)

Prefix	No.	Title	Semester Credits
ELT	100	Circuits I	4
ELT	101	Circuits II	4
ELT	102	Electronic Circuits Lab	2
ELT	103	Digital Principles	4
ELT	104	Computer Fundamentals for Technology	3
ELT	105	Solid State I	4
ELT	106	Digital Applications	4
ELT	201	Solid State II	4
ELT	202	Microprocessors	4
ELT	204	Linear Integrated Circuits	3

General Education Requirements (21 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	201	Technical Writing	3
SOC	101	Human Relations	3
MAT	104	Algebra/Trigonometry I	3
MAT	105	Algebra/Trigonometry II	3
SCI	103	Physics I	3
SCI	105	Physics II or	
SCI	203	Advanced Physics	3

Regional Electives (12 Credits) 12

Total Credits 69

ELECTRONICS TECHNOLOGY COURSE DESCRIPTIONS

ELT 100—CIRCUITS I

4 Credits
Introduction of DC & AC Theory, use of test equipment and fabrication skills. Topics include study of DC electrical circuits, Ohm's Law, Kirchhoff's Laws, series and parallel circuits, power, introductory magnetism, ammeters, voltmeters, ohmmeters, inductance, capacitance and implementation of basic principles of electrical measuring devices including verification of lecture materials in the laboratory.

ELT 101—CIRCUITS II

4 Credits
A study of DC and AC electrical circuits network theorems, operator, phasors, reactances, impedances, phase relationships, power, resonance, ideal and air-core transformers and an introduction to graphical techniques and transients.

ELT 102—CIRCUITS LAB

2 Credits
Laboratory experiments to complement Circuits I. Hands-on practice in the use of shop test equipment. Includes troubleshooting skills and care of equipment.

ELT 103—DIGITAL PRINCIPLES

4 Credits
Introduces digital electronics including logic gates and combinational logic circuits. Also logic circuit minimization techniques, digital decoders/encoders and multiplexers/demultiplexers, flip flops and asynchronous counters.

ELT 104—COMPUTER FUNDAMENTALS FOR TECHNOLOGY

3 Credits
Provides an introduction to microcomputer hardware, applications software, and programming. Emphasis is placed on computer literacy, operating systems, and structured language programming. Commonly used microcomputer applications are surveyed.

ELT 105—SOLID STATE I

4 Credits
A basic introduction to the theory and operation of semiconductor devices and circuits. Topics covered are signal and rectifying diodes and Bipolar Junction transistors, single and multistage amplifiers, discreet differential and operational amplifiers, power supplies, regulators and oscillator circuits.

ELT 106—DIGITAL APPLICATIONS

4 Credits
Advanced study of digital systems, including memory and D/A and A/D conversion. Construction of specified timing, circuits, and design driver/display systems; design of selected register, counters, and arithmetic circuits; and validation of operation. Hardware and general microprocessor system organization are included.

ELT 107—INTRODUCTION TO INDUSTRIAL CONTROLS

3 Credits
Basics of industrial controls as related to industrial electronics. Includes basic and pilot control devices such as circuit layouts, industrial schematics reduced voltage starters and multispeed controllers. Also transformer hookups and circuit protection.

ELT 108—COMMUNICATIONS ELECTRONICS

3 Credits
An overview of electronics applied to the communication field. Provides various hands-on applications of communication systems and various subsystems. Introduces voice communications, video communications, data communications using various systems.

ELT 109—TELECOMMUNICATIONS

3 Credits
Examines various methods in transmitting digital data from one location to another. Includes both classical modems over telephone lines and nontraditional methods.

ELT 110—FIBER OPTICS

3 Credits
An overview of fiber optics. Surveys uses for fiber optics, advantages, disadvantages, cable details, connectors, splices, sources, detectors, and fiber optic systems.

ELT 111—SATELLITE COMMUNICATIONS

3 Credits
Theory of satellite operation, site perimeters for, and methods of site preparation, and installation of satellite dish for TVRO. Aids decision making regarding type of dish for use in a particular installation.

ELT 112—BIO-MEDICAL ELECTRONICS I

3 Credits
Study of medical electronics equipment, including ECG, EEG defibrillators, heart monitors, other monitoring equipment, and respiratory equipment.

ELT 113—BASIC ELECTRICITY

3 Credits
Study of electrical laws and principles pertaining to DC and AC circuits. Includes current, voltage, resistance, power, inductance, capacitance, and transformers.

ELT 115—INTRODUCTION TO LASERS

3 Credits
An introduction to laser action, laser beam characteristics, types of lasers, safety considerations, general laser applications and laser and optical equipment. It serves to teach any student the basics of laser, laser systems, and applications, as well as to prepare beginning laser students for future courses.

ELT 201—SOLID STATE II

4 Credits
In-depth study of special semiconductor devices and circuits. Includes field effect transistors, uni-junction transistors, opto-electronic devices, thyristors, and amplifier biasing.

ELT 202—MICROPROCESSORS

4 Credits
Introduction to microprocessor system organization, operation and programming. A microprocessor instruction set is investigated and sample program routines are analyzed for their operation. Laboratory experience includes the operation and programming of microcomputer systems.

ELT 203—INDUSTRIAL ELECTRONICS

4 Credits
An overview of electronics applied in the industrial setting. Introduction to various applications of the industrial system and how electronics is applied to these systems. Introduces power machines, polyphase systems, solid state controls, transducers, industrial computer system.

ELT 204—LINEAR INTEGRATED CIRCUITS

3 Credits
Introduction to Operational Amplifiers (Op Amps), characteristics and operations. Covers filters, inverters, noninverters, feedback operations, gain linear regulators, switching regulators, voltage devices, voltage comparators, electronic timers, voltage controlled oscillators, phased locked loops, frequency to voltage conversion.

ELT 205—PERIPHERALS

3 Credits
In-depth study of peripherals used with typical computers and interfacing of the microcomputer with peripherals. Includes a study of data communications hardware and techniques. How to design circuits to interface microprocessors with industrial equipment. Includes the interfacing of microcomputers systems with input and output transducers for control systems. Techniques for logical troubleshooting of microcomputer systems.

ELT 206—ANALOG TROUBLESHOOTING TECHNIQUES

3 Credits
Techniques for logical troubleshooting of electronic circuits and simple systems with emphasis on systematic diagnostic methods, signal tracing, and signal injection methods. Provides experience in the use of shop test equipment and electronic communication skills.

ELT 207—DIGITAL TROUBLESHOOTING TECHNIQUES

3 Credits
Techniques for logical troubleshooting of microcomputers. Includes nodal testers, microcomputer controlled testers, static stimulus testers, signature analysis, and logic analyzers. System oriented troubleshooting procedures are emphasized.

ELT 208—MICROWAVE COMMUNICATIONS

3 Credits
Focuses on microwave transmission lines, waveguides, waveguide components, including hybrid couplers, attenuators, microwave filters, phase shifters, T-junctions, irises, and microwave tubes.

ELT 209—ADVANCED COMMUNICATIONS ELECTRONICS

3 Credits
The basics of microwave principles and in-depth study of matching techniques for transmission lines. Includes introduction to antennas and a thorough study of television operation.

ELT 210—VCR THEORY

3 Credits
Video cassette recorder theory with VCR troubleshooting techniques and VCR test equipment usage. Includes

diagnostic testing through signal injection and signal tracing. Emphasis on recording, playback and servo circuits. Quantitative and qualitative knowledge of fundamental principles and terms used in VCR theory and repair are covered.

ELT 211—WAVE OPTICS AND COMPONENTS

3 Credits
Treats the wave nature of light as manifested in interference, diffraction and polarization phenomena in optical systems. Analyzes and uses optical components that modify, control or detect light. Includes light sources, wave nature of light interference, diffraction, polarization, holography, beam splitters, filters, isolators, gratings, polarizers and non linear optical materials. Laboratory stresses hands on experience in application/evaluation of wave optic devices in typical optical systems.

ELT 212—NETWORKING

3 Credits
Study of types of protocol used in data communication systems. Includes an overview of networking, networking control, and interfacing. Areas of emphasis include protocols, packet switching systems, and local area networks.

ELT 213—BIO-MEDICAL ELECTRONICS II

2 Credits
Examines medical support systems, including X-ray equipment, respiration, and analyzers, and their maintenance. Also medical ultrasound, electrosurgery units and mechanical recorders. Prepares for licensing and certification.

ELT 214—INDUSTRIAL INSTRUMENTATION

3 Credits
A study of techniques and practices involved in the calibration of industrial control equipment. Provides emphasis on tear down, assembly, alignment, calibration, and operations of instruments.

ELT 215—LASER SYSTEMS AND APPLICATIONS

3 Credits
In-depth coverage of laser types and applications: Ion, molecular, liquid, solid state and semiconductor lasers. Flash lamps, powers supplies (CW and pulsed) and energy transfer mechanisms for each laser type are examined. Includes lasers in medicine, surgery, dentistry, communications, range finding, alignment, tracking, welding, cutting, drilling, data recording and display. Laboratory experiments stress hands-on operation and trouble shooting of each laser type and small scale examples of applications.

ELT 216—LASER AND OPTICAL MEASUREMENTS

3 Credits
Examines the instruments and methods available for evaluating laser light and supporting optical equipment. Includes an introduction to radiometry/photometry and typical energy/power detectors. Photographic recording mediums and major optical measuring instruments (spectrometers, spectrophotometers, monochromators and interferometers) and methods are also covered. Laboratory experiments stress hands-on experience with current optical measuring equipment and methods.

ELT 217—LASER PROJECTS

3 Credits
Laser projects is an individual project class in which students work directly with the instructor while building laser related project(s).

ELT 218—GEOMETRICAL OPTICS AND COMPONENTS

3 Credits
Applies mathematical and graphical techniques to the reflection/refraction of light at typical optical surfaces. Analyzes and uses typical optical components. Includes ray tracing, imagining with lenses, F-stops and apertures, mirrors, lenses, prisms, windows, optical flats, matrix optics, etalons, beam expanders, collimators and autocollimators, optical tables, optical supports, optical systems and photographic components.

ELT 281-293—SPECIAL TOPICS IN ELECTRONICS TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

HEATING, AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

The Heating, Air Conditioning and Refrigeration Technology program at Ivy Tech is designed to offer students the possibility of developing initial employment in this field.

Heating, air conditioning and refrigeration technicians may work in service, installation, design, sales, or estimation areas. Entry level positions may be found in factories, hospitals, theaters, restaurants, office buildings, government agencies, service firms or through self-employment.

A two-year program requires 63 credits and leads to the Associate in Applied Science degree. Technical Certificates are also available in specialized areas.

The program is offered in Gary, Valparaiso, South Bend, Fort Wayne, Lafayette, Kokomo, Muncie, Terre Haute, Indianapolis, Richmond, Bloomington, Columbus, Evansville and Sellersburg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (39 Credits)

Prefix	No.	Title	Semester Credits
HEA	101	Heating Fundamentals	3
HEA	103	Air Conditioning and Refrigeration I	3
HEA	104	Heating Service	3
HEA	106	Air Conditioning and Refrigeration II	3
HEA	107	Duct Fabrication and Installation	3
IMT	103	Motors and Motor Controls	3
ELT	113	Basic Electricity	3
HEA	201	Cooling Service—Electrical	3
HEA	202	Electrical Circuits and Controls	3
HEA	203	Heat Loss and Gain Calculation	3
HEA	204	Commercial Refrigeration	3
HEA	205	Heat Pump Service	3
HEA	209	Psychrometrics	3

General Education Courses (12 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
MAT	XXX	Math Elective	3
XXX	XXX	General Education Elective	3
SOC	101	Human Relations	3

Regional Electives (12 Credits)		12
	Total Credits	63

HEATING, AIR CONDITIONING AND REFRIGERATION COURSE DESCRIPTIONS

HEA 101—HEATING FUNDAMENTALS

3 Credits
Fundamentals applicable to the heating phase of air conditioning. Includes types of units, parts, basic controls, functions, and applications. Emphasizes practices, tools and meter uses, temperature measurement, heat flow, and the combustion process.

HEA 103—AIR CONDITIONING AND REFRIGERATION I

3 Credits
Introduction to compression systems used in mechanical refrigeration and air conditioning. Includes the refrigeration cycle, compressors, receivers, evaporators, condensers, metering devices, refrigerants, temperature conversions, absolute temperatures and gas laws. Introduction to soldering, brazing and oxyacetylene gas welding apparatus and basic mechanical procedures used in industry.

HEA 104—HEATING SERVICE

3 Credits
Covers procedures used to analyze mechanical and electrical problems encountered when servicing residential heating systems, including gas, oil, electric and hydronic heating equipment. Electrical schematics and diagrams, combustion testing, venting and combustion air requirements, installation and service procedures are considered.

HEA 106—AIR CONDITIONING AND REFRIGERATION II

3 Credits
Continues air conditioning and refrigeration fundamentals, compressors, condensers, receivers, metering devices, evaporators and other system components. Includes continuation of basic mechanical service procedures used in industry and in-depth study of domestic refrigerators, freezers and window air conditioners.

HEA 107—DUCT FABRICATION AND INSTALLATION

3 Credits
Lecture and laboratory course in blueprint reading, layout of duct work, and construction of duct fittings from student layouts. The basic use of hand tools, safety procedures and shop equipment specific to the sheet metal trade are included.

HEA 201—COOLING SERVICE—ELECTRICAL

3 Credits
Service procedures for residential air conditioning and refrigeration systems. Includes low voltage controls (24 volts) and line voltage controls such as defrost timers, defrost heaters, relays and cold controls, with emphasis on schematic and pictorial diagrams.

HEA 202—ELECTRIC CIRCUITS AND CONTROLS

3 Credits
Study of various types of controls used in heating, air conditioning, and refrigeration. These include: gas, oil, and cooling controls, thermostats, humidistats, aquastats, electronic thermostats and temperature controls. Also applications in the operation of controls and their integration in complex control systems, aided by the use of schematic and pictorial diagrams.

HEA 203—HEAT LOSS AND GAIN CALCULATION

3 Credits
Methods used in calculating heat loss and gain in sizing units for residential and light commercial applications. Includes methods used to reduce energy consumption.

HEA 204—COMMERCIAL REFRIGERATION

3 Credits
Examines air conditioning and refrigeration systems for commercial use, including medium and low temperature applications. Includes refrigeration accessories, metering devices and advance control arrangements.

HEA 205—HEAT PUMP SYSTEMS SERVICE

3 Credits
Examines heat pumps of all types, emphasizing residential applications and system control balance points, COP ratings, pictorial and schematic diagrams.

HEA 206—ADVANCED COOLING SERVICE

3 Credit
Considers methods of troubleshooting electrical and mechanical components of air conditioning and refrigeration systems.

HEA 207—HVAC CODES

3 Credits
Study of state and local codes covering installation, repair, alteration, relocation, replacement and erection of heating,

ventilation, cooling and refrigeration systems. Includes job-related costs of material and equipment, labor, warranty, taxes, permits and sub-contracts. Students will estimate service and maintenance contracts.

HEA 208—ENERGY MANAGEMENT AND BALANCING

3 Credits
Deals with reduction in energy usage in a facility, operational and maintenance improvements, new building design standards, shut down and consolidation, alternate energy resources, retrofitting existing buildings and energy awareness. Includes practice in adjusting and setting fan speeds, dampers and other air regulating devices.

HEA 209—PSYCHROMETICS

3 Credits
Covers methods of calculating air qualities and quantities using the psychrometic chart; with emphasis on sizing duct work for residential applications.

HEA 210—ALTERNATIVE ENERGY FUNDAMENTALS

3 Credits
Solar energy: methods of collecting, using and storing energy for heating and cooling work. Covers space heating and cooling, domestic and commercial hot water heating, and swimming pool heating. Air and water system design, collector cells, pumps sizing, pipe and duct sizing, design of distribution systems, and operational cost and savings.

HEA 211—ABSORPTION SYSTEMS

3 Credits
Surveys special cooling systems with emphasis on the absorption cycle. Includes ammonia-water and lithium-bromide cycles, types of units, arrangements, parts, function of various parts and applications of units in air conditioning systems, in addition to diagnosis of service problems.

HEA 212—ADVANCED HVAC CONTROLS

3 Credits
Covers control systems beyond ordinary residential and single zone commercial jobs. Includes solid state controls, zoning controls, modulating controls, low ambient controls, heat recovery and energy management controls, economizer controls and pneumatic controls.

HEA 213—ESTIMATING, MANAGEMENT AND SALES

3 Credits
The use of blueprints, specifications, AIA documents, application data sheets, bid forms and contracts in estimating materials and labor in the HVAC business. Also includes advertising, direct labor, indirect labor, overhead, warranty coverages, taxes, permits, subcontracts, margins, mark-ups and profit. Students will estimate service contracts and study service organization, service procedures, record keeping, parts inventory control, and insurance liability.

HEA 214—APPLIED DESIGN

3 Credits
Study of complete air conditioning systems through analysis of a specific job. Includes calculation of heat losses and gains, selection of equipment and layout distribution systems, preparation of working drawings and determination of operation and maintenance costs. Covers design and sizing of refrigerant piping, cooling tower piping, and chilled water-hot water piping.

HEA 281-293—SPECIAL TOPICS IN HEATING, AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

INDUSTRIAL LABORATORY TECHNOLOGY

The Industrial Laboratory Technology program provides comprehensive instruction to prepare students for entry level positions as industrial laboratory technicians. Instruction in testing and inspecting at various production stages allows students to perform analyses and compile and evaluate statistical data to determine quality and reliability standards in the manufacturing process. The course of study includes methodologies in compilation and evaluation of statistical data to determine adherence to specified quality or reliability standards. The program will offer students the opportunity to develop skills to test products for dimensions, performance, or chemical characteristics and to develop written and oral reports.

A two year program requiring 66 credits leads to an Associate in Applied Science Degree. The Program is offered in Terre Haute and Indianapolis.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (30 Credits)

Prefix	No.	Title	Semester Credits
ILT	101	Industrial Laboratory Techniques	3
ILT	201	Industrial Instrumentation and Techniques I	3
ILT	202	Industrial Instrumentation and Techniques II	3
ILT	203	Environmental Monitoring	3
INF	101	Introduction to Microcomputers	3
IST	101	Quality Control Concepts and Techniques I	3
IST	102	Techniques of Supervision I	3
SCI	103	Physics I	3
SCI	105	Physics II or	
SCI	203	Advanced Physics	3
MAT	106	Statistics	3

General Education Requirements (24 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
SOC	101	Human Relations	3
MAT	104	Algebra/Trigonometry I	3
MAT	105	Algebra/Trigonometry II	3
SCI	107	Chemistry	3
SCI	111	Microbiology	3
ENG	201	Technical Writing	3

Regional Electives (10 Credits) 10

Total Credits 64

INDUSTRIAL LABORATORY TECHNOLOGY COURSE DESCRIPTIONS

ILT 101—INDUSTRIAL LABORATORY TECHNIQUES

3 Credits
Basic skills needed in the industrial laboratory: laboratory safety identification, care, and operation of basic laboratory equipment and glassware; and definition and preparation of reagents. Includes laboratory exercises in the use of selected equipment and the performance of appropriate procedures.

ILT 201—INDUSTRIAL INSTRUMENTATION AND TECHNIQUES I

3 Credits
Theoretical aspects of industrial laboratory instrumentation. Imparts the theories and laws that govern the way instruments operate. Laboratory assignments include experimentation spectrophotometric, separation, and other analytical devices.

ILT 202—INDUSTRIAL INSTRUMENTATION AND TECHNIQUES II

3 Credits
Advances theoretical aspects of industrial laboratory instrumentation. Laboratory assignments include experimentation in atomic absorption spectrophotometry.

ILT 203—ENVIRONMENTAL MONITORING

3 Credits
Deals with aspects of environmental pollution, providing a realistic and objective view of pollution problems. Includes the role of technology in the identification of environmental pollution.

ILT 205—INTRODUCTION TO TECHNOLOGY

3 Credits
Reviews disciplines comprising scientific and engineering fields of study. Covers physics, chemistry, biology, environmental science, and civil, mechanical, electrical, and industrial engineering. Introduces theory, principles, and practices related to the work of a scientific or engineering assistant/aide. Also, safety, professional ethics, and use of the scientific calculator/computer as a scientific and engineering tool.

ILT 206—FOOD AND DRUG ANALYSIS

3 Credits
Examines the food processing industry. Laboratory experiments include various analytical techniques and quality control standards utilized by the food industry. Includes classification of drugs and various methods of purification. Laboratory exercises cover instruments and procedures used to monitor the quality and quantity of the composition of a product.

ILT 207—WASTEWATER ANALYSIS

2 Credits
This course deals with the chemical and biological analysis of wastewater. Major pollutants of water are determined and quantified. The wastewater treatment steps are discussed so as to determine ideal lab sampling locations. Various wastewater tests such as BOD's, COD's, sedimentation rates and biological examinations will be performed.

ILT 281-293—SPECIAL TOPICS IN INDUSTRIAL LABORATORY TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

INDUSTRIAL MAINTENANCE TECHNOLOGY

The two-year Industrial Maintenance Technology program requires 70 semester hours for completion and leads to an Associate in Applied Science degree. The program provides instruction in advanced technologies for individuals seeking employment as technicians who are involved in maintaining industrial facilities and equipment. Competencies necessary for industrial maintenance technicians include installation, maintenance and troubleshooting of electrical, mechanical and fluid power systems; basic heating, air conditioning and welding techniques; technical interpretation; automated systems application; safety; and communications, interpersonal relations, math, science, and computer skills.

Industrial maintenance technicians work in a variety of industrial and business settings including manufacturing, production, building management, hotels, hospitals, apartment complexes, and other service-oriented industries. Students may specialize in such areas as electrical, machinery, facilities, and heating/air conditioning.

Technical Certificates are also available in specialized areas. The program is offered in Gary, Valparaiso, South Bend, Elkhart, Fort Wayne, Lafayette, Logansport, Muncie, Terre Haute, Indianapolis, Richmond, Evansville and Sellersberg.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (39 Credits)

Prefix	No.	Title	Semester Credits
ELT	113	Basic Electricity	3
IMT	102	Introduction to Print Reading	3
IMT	103	Motors and Motor Controls	3
IMT	104	Fluid Power Basics	3
IMT	105	Heating and Air Conditioning Basics	3
IMT	201	Fluid Power Systems	3
IMT	202	Electrical Circuits	3
IMT	203	Machine Installation	3
IMT	204	Machine Maintenance	3
IMT	205	Programmable Controllers I	3
AMT	102	Introduction to Robotics	3
WLD	114	Introductory Welding	3
MTT	101	Machine Fundamentals I	3

General Education Courses (18 Credits)

ENG	101	English Composition	3
ELT	104	Computer Fundamentals for Technology	3
MAT	104	Algebra/Trigonometry I	3
MAT	XXX	Math Elective or	
ENG	XXX	English Elective	3
SOC	XXX	Social Science Elective	3
SCI	103	Physics I	3

Regional Electives (13 Credits) 12

Total Credits 70

INDUSTRIAL MAINTENANCE TECHNOLOGY COURSE DESCRIPTIONS

IMT 102—INTRODUCTION TO PRINT READING

3 Credits
A basic course in reading and interpreting machine shop symbols, welding blueprints, and working drawings used in trades and crafts. Attention is given to dimension, shape, fabrication and assembly. Applies basic mathematics in the solution of print and performance problems.

IMT 103—MOTORS & MOTOR CONTROLS

3 Credits
This course is designed to give each student a complete understanding of all types of electric motors, extending the small shaded pole fan motors to the large three phase motors. The student will receive an education in motor theory magnetism and how it effects motor rotation. Motor starting components and protective devices for motor circuits will be explained and shown in detail. Heat dissipation from a motor, motor slippage and how frequency effects a motor will be discussed. Multi-speed motors and how they are wired to obtain different speeds, and capacitors and how they effect a motor circuit will be included.

IMT 104—FLUID POWER BASICS

3 Credits
This course introduces the student to fluid power principles and components. The student will learn basic circuit design, symbols, and schematic diagrams to build a foundation for career work in the fluid power technology.

IMT 105—HEATING AND AIR CONDITIONING BASICS

3 Credits
Fundamentals of heating and compression systems used in mechanical refrigeration and air conditioning. Includes combustion process, heat flow, temperature measurement, gas laws and heating and refrigeration cycles and components used in systems. Introduces basic mechanical service procedures used in industry.

IMT 108—MEASUREMENTS AND CALIBRATION

3 Credits
This course is designed to provide instruction on the purpose, function, and application of oscilloscopes and related instruments.

IMT 120—METALLURGY FUNDAMENTALS

3 Credits
This course studies the fundamentals of thermodynamics and reactions occurring in metals subjected to various kinds of heat treatment. Includes classification and properties of metals; chemical and physical metallurgy; theory of alloys; heat treatment principles as applied to ferrous and non-ferrous materials, tests to determine uses; heat treatment for steels, special steels, and cast iron; powder metallurgy; use of gas and electric furnaces and their controls.

IMT 121—INDUSTRIAL SAFETY

3 Credits
Covers Occupational Safety and Health standards and codes with emphasis on applications of codes to typical work situations. Includes emergency first aid, safety protection, eye protection, chemical handling. Covers employer and employee rights, as well as violations, citations, penalties, variances, appeals, record keeping.

IMT 122—ELECTRICAL WIRING FUNDAMENTALS

3 Credits
Covers National Electrical Code and its relationship to residential and commercial wiring. Includes mechanical installation of hardware, metering equipment, lights, switches, and design. Tool use as well as material selection is discussed.

IMT 201—FLUID POWER SYSTEMS

3 Credits
This course introduces the student to complex fluid power circuits. The student will learn to design, analyze, and troubleshoot complex circuits using schematic diagrams. This course studies detailed construction of typical industrial fluid power components. Students will disassemble and repair fluid power components in the lab.

IMT 202—ELECTRICAL CIRCUITS

3 Credits
Fundamentals of single- and three-phase alternating current, including parallel circuits, resistance, inductance, switching, fusing, current requirements, transformer applications and motor and motor control. Also, basics of mechanical and electrical installations emphasizing tool use and material selection. Includes electrical troubleshooting diagnosis and repair.

IMT 203—MACHINE INSTALLATION

3 Credits
Introduces installation and rigging and use of proper hand, power tools and measuring instruments.

IMT 204—MACHINE MAINTENANCE

3 Credits
Examines procedures for the removal, repair and installation of machine components. Methods of installation, lubrication practices, and maintenance procedures for industrial machinery are included.

IMT 205—PROGRAMMABLE CONTROLLERS I

3 Credits
Introduces the basic theory, operation, and programming of programmable controllers.

IMT 206—PROGRAMMABLE CONTROLLERS II

3 Credits
In-depth study of programmable controllers. Emphasizes program language, installation, maintenance and applications.

IMT 281-293—SPECIAL TOPICS IN INDUSTRIAL MAINTENANCE TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

MACHINE TOOL TECHNOLOGY

The Machine Tool Technology program provides training in the many facets of the machine tool industry through work with machines, machine tools, computer-controlled machines and precision inspection equipment. It is the machine tool technician who fabricates the pieces that, when assembled with other such pieces, comprise the complex machinery used to manufacture millions of products. In other words, most items we use every day trace their history to the hands and mind of a skilled machine tool technician.

Machine Tool technicians are employed in such positions as CNC operator/programmer, tool and die maker, jig and fixture maker, statistical quality technician, specialized machine technician, metallurgical assistant, tooling supervisor, tooling salesperson, or field service representative. In addition to the Associate Degree program, Technical Certificates are also available in specialized areas.

The program is offered at South Bend, Fort Wayne, Lafayette, Logansport, Muncie, Indianapolis, Connersville and Richmond.

ASSOCIATE IN APPLIED SCIENCE DEGREE

Technical Courses (52 Credits)

Prefix	No.	Title	Semester Credits
MTT	101	Machining Fundamentals I	3
MTT	102	Machining Fundamentals II	3
IMT	102	Introduction to Print Reading	3
MTT	104	Machinery Handbook	3
MTT	105	Machine Tool Setup and Operation	3
MTT	106	Advanced Engineering Print Interpretation	3
IMT	120	Metallurgy Fundamentals	3
MTT	108	Precision Measurement	3
MTT	201	Advanced Machine Tool Processes	3
MTT	202	Advanced Machine Tool Setup and Operation	3
MTT	203	Tool Fabrication I	3
MTT	204	CNC Programming I	3
MTT	205	Interactive CNC	4
MTT	206	Specialized Machining Theory	3
MTT	207	Specialized Machining Applications	3
MTT	208	Tool Fabrication II	3
MTT	209	CNC Programming II	3

General Education (12 Credits)

ENG	101	English Composition	3
SOC	101	Human Relations	3
MAT	101	Algebra I	3
MAT	103	Geometry/Trigonometry	3

Regional Electives (3 Credits) 3

Total Credits 67

MACHINE TOOL TECHNOLOGY COURSE DESCRIPTIONS

MTT 101—MACHINE FUNDAMENTALS I

3 Credits
Covers machine tool processes, the care and use of hand tools and measuring devices. Emphasis on basic manipulative skills, print interpretation, and lab safety features.

MTT 102—MACHINE FUNDAMENTALS II

3 Credits
Development of bench work, sawing, filing, layout, drilling and reaming skills in the completion of assigned projects. Includes technical terminology and mathematical applications.

MTT 104—MACHINERY HANDBOOK

3 Credits
Explores the intent and use of the Machinery's Handbook. Applies principles and concepts in the Machinery's Handbook to projects in the industry.

MTT 105—MACHINE TOOL SETUP AND OPERATION

3 Credits
Examines completed, hardened and ground V-block construction, internal and external threads. Attention is also given to the use of the dividing head.

MTT 106—ADVANCED ENGINEERING PRINT INTERPRETATION

3 Credits
Applied mathematics in solving engineering and design related problems in the areas of die design, fabrication, assembly, special machinery, and die casting. Emphasis on geometric form and position tolerancing.

MTT 108—PRECISION MEASUREMENT

3 Credits
Techniques of linear and angular measurement and, applications in machine tool production and quality control.

MTT 201—ADVANCED MACHINE TOOL PROCESSING

3 Credits
Advanced machining theories and techniques. Introduces advanced processing procedures and operations.

MTT 202—ADVANCED MACHINE TOOL SETUP AND OPERATION

3 Credits
Includes advanced operational and setup procedures for tool processing. Emphasis on surface and cylindrical grinding with related mathematical applications.

MTT 203—TOOL FABRICATION I

3 Credits
Concepts of tooling design, assembly, and standards of fabrication. Emphasizes jig and fixture components, their application and operational characteristics.

MTT 204—CNC PROGRAMMING I

3 Credits
Introduces the concept of automatic process control and fundamentals of feedback elements, transmission, control action, and controlling elements as used in pneumatics, hydraulic, and electronic systems. Emphasis on the relationship between programming language and machine components.

MTT 205—INTERACTIVE CNC

4 Credits
Introduces computer-assisted numerical control programming as it relates to automated milling and machining centers. Emphasizes proper programming techniques, control familiarity, file data, and machining functions.

MTT 206—SPECIALIZED MACHINING THEORY

3 Credits
Advanced machining techniques and specialized applications, including a variety of rotary and helical operations and procedures.

MTT 207—SPECIALIZED MACHINING APPLICATIONS

3 Credits
Applications in advanced machining techniques and specialized applications including differential indexing, gear cutting, cam milling and tracer design.

MTT 208—TOOL FABRICATION II

3 Credits
Concepts and standards for tooling design and fabrication. Emphasis on components and operational characteristics of blanking, piercing, and progressive type dies.

MTT 209—CNC PROGRAMMING II

3 Credits
Examines a variety of programming formats for CNC lathe and milling applications. Preparation of programming manuscripts and canned cycle relevancy. Emphasis on proper programming techniques and control familiarization.

MTT 281-293—SPECIAL TOPICS IN MACHINE TOOL TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

MINING OPERATIONS TECHNOLOGY

The Mining Operations Technology program offers on-the-job training as well as classroom study in coal operation and management. Courses include mining law, blasting and explosives, mine machinery, operations, reclamation mine planning, and economics of mining. The program prepares students for mining jobs ranging from apprentice to experienced machine operator. Entry positions vary with the type and method of mining.

The two-year program, requiring 76 credits, leads to an Associate in Applied Science Degree. The program is offered in Terre Haute.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (58 Credits)

Prefix	No.	Title	Semester Credits
MIN	101	Mining Fundamentals	4
MIN	102	Surface Mining Machinery	3
MIN	104	General Physical Geology	3
MIN	105	Electrical Circuits and Systems	3
MIN	106	Transmission Systems	2
MIN	107	Operation Safety and Accident Prevention	3
MIN	108	Elements of Spoil Management	2
MIN	109	Coal Sampling and Analysis	2
MIN	110	Labor Relations	2
MIN	111	First Aid and Safety Management	3
MIN	112	Elements of Reclamation	3
MIN	113	Coal Preparation Plants	1
MIN	114	Water Drainage and Pollution Law	3
WLD	114	Introductory Welding	3
MIN	201	Mining Operation Planning	3
MIN	202	Surface Mine Hydraulics	2
MIN	203	Mine Maps and Surveying	2
MIN	204	Equipment Operations Lab	2
MIN	205	Blasting Technology and Explosives Safety	4
MIN	206	Techniques of Supervision I	2
IMT	104	Fluid Power Basics	3
INF	101	Introduction to Microcomputers	3

General Education Requirements (18 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
ENG	201	Technical Writing	3
MAT	101	Algebra I	3
MAT	103	Geometry/Trigonometry	3
SOC	101	Human Relations	3
		Total Credits	76

MINING OPERATIONS TECHNOLOGY COURSE DESCRIPTIONS

MIN 101—MINING FUNDAMENTALS

4 Credits
Fundamentals of mining, with emphasis on management and safety. Deals with geological factors affecting mineral formation, U.S. mineral resources, and methods of mining. Includes tours of surface mines in the local area.

MIN 102—SURFACE MINING MACHINERY

3 Credits
Covers concepts and operating principles of all types of surface mining machinery. Includes student reports of visits to area mines, focusing on structural defects, safe operation and maintenance of mines, operator training and skills, and life expectancy of workers.

MIN 104—GENERAL PHYSICAL GEOLOGY

3 Credits
Fundamentals of geology and the geological history of North America, with emphasis on the Mississippian and Pennsylvanian periods. Examines sediments and sedimentary rock especially those allied with coal beds. Includes field trips in the local area.

MIN 105—ELECTRICAL CIRCUITS AND SYSTEMS

3 Credits
Introduces principles of electricity pertaining to machine operation. Includes conductors and conductor sizes, magnetic circuits, coil polarities, and AC and DC motors.

MIN 106—TRANSMISSION SYSTEMS

2 Credits
Applications of gears and gear drives and mechanical advantage in coal transportation systems, including truck, rail, slurry, and conveyor belt.

MIN 107—OPERATION SAFETY AND ACCIDENT PREVENTION

3 Credits
Knowledge and skills useful in public relations and safety education. Develops speaking, listening, and writing skills. Introduces use of the Bureau of Mines Dictionary of Mines. Includes use of safety films and review of wage agreements, forms, and reports required by government agencies.

MIN 108—ELEMENTS OF SPOIL MANAGEMENT

2 Credits
Principles of spoil control, with emphasis on planning, use, and management of spoil materials. Includes principles of vegetative survival, deposition of overburden, and slope control.

MIN 109—COAL SAMPLING AND ANALYSIS

2 Credits
Provides laboratory training in approved methods of coal analysis, with emphasis on the Bureau of Mines safety requirements.

MIN 110—LABOR RELATIONS

2 Credits
Investigates labor and management approaches to the operation of mines. Emphasis is placed on proper and ethical procedures.

MIN 111—FIRST AID AND SAFETY MANAGEMENT

3 Credits
Covers first aid, dust and noise evaluation, gas detection, safe and unsafe practices, accident reduction, emergency aid for the injured, mine rescue operations, safety duties of mine personnel, and instructor training and certification by the Mine Safety and Health Administration.

MIN 112—ELEMENTS OF RECLAMATION

3 Credits
Land reclamation as it pertains to the surface mining industry. Covers basics of reforestation and reviews the types of grasses and legumes found in different geographical areas. Examines existing federal and state regulations and future trends. Emphasizes the importance of production and reclamation as a working unit.

MIN 113—COAL PREPARATION PLANTS

1 Credit
Purposes and processes of coal preparation plants. Attention is given to raw coal, disposal of refuse and slurry, and coal storage, loading, and mechanics.

MIN 114—WATER DRAINAGE AND WATER POLLUTION LAWS

3 Credits
Includes laws and problems pertaining to the control of water in mining operations. Covers slurry ponds, pit drainage, and acid seepage, with emphasis on federal EPA regulations.

MIN 115—BASIC SURVEYING

3 Credits
Comprehensive introductory course in performing measurements in horizontal and vertical distances using standard surveying tools and sophisticated electronic equipment. To provide the understanding of proper techniques applicable to land surveying and construction surveying. Includes classroom instruction and field experiences.

MIN 116—SURVEYING TECHNIQUES I

3 Credits
Continuation of classroom and field study providing understanding of the relationships of angles and distances. Enables student to perform and record the necessary measurements for land surveying and instruction projects.

MIN 117—SURVEYING TECHNIQUES II

3 Credits
Designed to provide the student with working knowledge to perform detailed surveys for land surveying, construction and related projects. Includes the development and understanding of land surveys, field engineering, construction layout, route surveying and topical surveying.

MIN 118—MAPPING

1 Credit
A study of map types and applications to the planning and design phases of buildings, highways, reservoirs, streams and other engineered projects. Provides understanding of standard procedural methods of drawing and reading of land surveys, construction plans, topographic and aerial mapping important to government, construction, forestry, land use and utilization companies and agencies.

MIN 119—PLANNING & MAPPING

1 Credit
Develops a working knowledge of required detail and the relationships and requirements for providing plans for conversion projects, forestry, construction and geology. Introduces computer aided drafting systems.

MIN 201—MINING OPERATION PLANNING

3 Credits
Considers effective planning in daily and long-range mining operations.

MIN 202—SURFACE MINE HYDRAULICS

2 Credits
Examines hydraulic and pneumatic systems design and the use of tools and repairing and troubleshooting hydraulic and pneumatic systems. Covers hydraulic and pneumatic valves, oils, gauges, fittings, hoses, and other components.

MIN 203—MINE MAPS & SURVEYING

2 Credits
Focuses on the use of mine maps and surveying techniques applicable to mining. Includes taping, profile leveling, cross-sections, earthwork computations, and transit stadia and transit-tapes surveys.

MIN 204—EQUIPMENT OPERATIONS LAB I

2 Credits
Covers practices and devices pertaining to the extraction of overburden and the transportation of coal. Examines equipment used in drainage and electric, hydraulic, and compressed air power and coal preparation machinery.

MIN 205—BLASTING TECHNOLOGY & EXPLOSIVES SAFETY

4 Credits
Instructs persons who are engaged in or directly responsible for the use of explosives in surface mining and reclamation operations in the proper handling, transportation, storage, and use of explosives.

MIN 206—TECHNIQUES OF SUPERVISION I

2 Credits
Examines employee development, with emphasis on the responsibilities of the beginning or newly appointed supervisor functioning within the organizational structure. Also covered are techniques for communications, motivation, delegation of authority, interviews, orientation and induction of new employees, and evaluation of employee performance as directed to the Mine Safety and Health Administration's federal regulations and the United Mine Worker's union contracts.

MIN 207—SURVEYING TECHNIQUES III

3 Credits
Designed to provide the student with working knowledge to perform detailed surveys for land surveying, construction and related projects. Includes the development and understanding of land surveys, field engineering, construction layout, route surveying and topical surveying.

MIN 208—SURVEYING/LAND MEASUREMENT EXTERNSHIP I

3 Credits
Field application of surveying techniques.

MIN 209—SURVEYING/LAND MEASUREMENT EXTERNSHIP II

3 Credits
Advanced application of surveying techniques.

MIN 210—SURVEYING/LAND MEASUREMENT EXTERNSHIP III

3 Credits
Comprehensive application of surveying techniques.

MIN 211—SURFACE MINING FIELD STUDY I

4 Credits
Provides for field projects in surface mining, in compliance with cooperative education policies. Student projects will include data collection and analysis and actual work experience.

MIN 212—SURFACE MINING FIELD STUDY II

4 Credits
Provides opportunity for extended practice and skill development in coal extraction and haulage in surface mining.

MIN 213—ECONOMICS OF MINING AND COST CALCULATION

3 Credits
Investigates the evolution of rules and regulations relating to production and use of minerals. Examines profit margins, taxation, depreciation and depletion allowances, foreign competition and interstate commerce regulations.

MIN 214—EQUIPMENT OPERATIONS LABORATORY II

1 Credit
Offers practical experience in handling equipment used in the extraction of overburden and the transportation of coal. Includes equipment used in drainage and electric, hydraulic, and compressed air power and coal preparation machinery.

MIN 215—SURFACE MINING FIELD STUDY III

4 Credits
Provides opportunities for extended practice and skill development in overburden removal in surface mining.

MIN 216—SURFACE MINING FIELD STUDY IV

4 Credits
Provides further opportunities for extended practice and skill development in specified areas of surface mining.

MIN 217—COAL MINE SUPERVISION

4 Credits
Introduces coal mine management and supervisory obligations. Attention is given to motivation, employee relations, and management by objectives.

MIN 281-293—SPECIAL TOPICS IN MINING OPERATIONS TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

PLASTICS MANUFACTURING TECHNOLOGY

The Plastics Manufacturing program prepares skilled technicians for the plastics field. Training is offered in plastic materials, testing, and fabrication. Attention is given to various types of plastic and includes: thermosetting and thermoplastic compounds; operation, setup, and maintenance of plastics machines; uses of plastics in production processes; injection and extrusion molding; product, mold, and tool design; quality control; print reading; electrical circuits; hydraulics; and pneumatics.

The program offers students the opportunity to develop skills in molding and/or die making for training in plastics technology, while acquiring a foundation in machine technology.

The two-year Associate in Applied Science degree program requires 64 credits for completion. Technical Certificates are also available in specialized areas. The program is offered in South Bend.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (42 Credits)

Prefix	No.	Title	Semester Credits
PMT	101	Introduction to Plastics	3
PMT	102	Extrusion	3
PMT	103	Injection Molding	3
PMT	104	Thermoplastic Materials	3
PMT	105	Low Pressure Tooling	3
PMT	201	Thermoforming	3
PMT	202	Current Topics in Plastics	3
PMT	203	Thermoset Materials	3
PMT	204	Processing Polyolefins	3
IST	102	Techniques of Supervision I	3
IMT	102	Introduction to Print Reading	3
IMT	104	Fluid Power Basics	3
IMT	202	Electrical Circuits	3
INF	101	Introduction to Microcomputers	3

General Education Requirements (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
MAT	101	Algebra I	3
MAT	103	Geometry/Trigonometry	3
SOC	101	Human Relations	3

Regional Electives (7 Credits) 7

Total Credits 64

PLASTICS MANUFACTURING COURSE DESCRIPTIONS

PMT 101—INTRODUCTION TO PLASTICS

3 Credits
An introduction to the field of plastics and related processes. Includes aspects of material handling and safety as it pertains to each process type. Also includes information concerning MSDS requirements and regulations.

PMT 102—EXTRUSION

3 Credits
Laboratory course examines the extrusion industry. Covers equipment, processes and materials. Troubleshooting techniques are also explored.

PMT 103—INJECTION MOLDING

3 Credits
Laboratory course concentrates on the injection molding industry. Deals with equipment, processes and materials and includes troubleshooting techniques.

PMT 104—THERMOPLASTIC MATERIALS

3 Credits
Materials and test methods for thermoplastic materials; processing, handling and physical considerations.

PMT 105—LOW PRESSURE TOOLING

3 Credits
Study of the methods and materials needed for the production of low cost molds and forms. Students construct a tool for producing product.

PMT 201—THERMOFORMING

3 Credits
Laboratory course focusing on the thermoforming industry. Various methods of forming include: vacuum, pressure and combinational processes.

PMT 202—CURRENT TOPICS IN PLASTICS

3 Credits
Presents topics of current interest to students and industry. Substantial research and industry contact is involved.

PMT 203—THERMOSET MATERIALS

3 Credits
Materials and test methods for thermoset materials. Processing, handling and physical considerations as well as composites will be covered.

PMT 204—PROCESSING POLYOLEFINS

3 Credits
Current processes and effects of the most used plastic material will be explored. Processes covered include rotational casting and blow molding.

PMT 205—FIBER REINFORCED PLASTICS

3 Credits
A laboratory course examining the FRP industry: equipment, processes and materials. Troubleshooting techniques will be explored.

PMT 281-293—SPECIAL TOPICS IN PLASTICS MANUFACTURING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

POLLUTION TREATMENT TECHNOLOGY

The Pollution Treatment Technology program prepares students for occupations in wastewater treatment and air pollution control in industry, municipalities and institutions. Because of the diversity of Indiana's wastewater and water supply treatment, air pollution control, solid waste and toxic substance management, water distribution, and the control of hazardous materials, are offered on a regional basis. Course work also covers equipment and maintenance, reporting and purchasing, environmental administration and plant operations. The program offers preparation for initial employment, state licensing examinations and upgrading skills.

The two-year program, requiring 64 credits, leads to the Associate in Applied Science Degree. A Technical Certificate is also available. The program is offered in Valparaiso.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (36 Credits)

Prefix	No.	Title	Semester Credits
PTT	101	Introduction to Environmental Systems	3
PTT	102	Environmental Administration	3
PTT	103	Environmental Chemistry I	3
PTT	104	Plant Operations—Sanitary	3
PTT	105	Air Pollution Control I	3
PTT	106	Hazardous Materials Management	3
PTT	108	Engineering Properties of Earth Materials	3
PTT	203	Environmental Microbiology	3
PTT	204	Basic Fluid Mechanics	3
PTT	207	Water Treatment	3
PTT	209	Plant Maintenance	3
ELT	104	Computer Fundamentals for Technology	3

General Education Requirements (15 Credits)

Prefix	No.	Title	
ENG	101	English Composition	3
ENG	103	Speech	3
SCI	107	Chemistry	3
SCI	111	Microbiology	3
MAT	101	Algebra I	3

Regional Electives (13 Credits) 13

Total Credits 64

POLLUTION TREATMENT TECHNOLOGY COURSE DESCRIPTIONS

PTT 101—INTRODUCTION TO ENVIRONMENTAL SYSTEMS

3 Credits
An overview of pollution problems including, water air, solid waste, radiation, population and noise. Investigates current national and international problems and concerns.

PTT 102—ENVIRONMENTAL ADMINISTRATION

3 Credits
Reviews local, state, and federal government requirements related to environmental issues. Introduces fundamentals of environmental law. Current events relating to environmental enforcement actions and changing regulations are covered.

PTT 103—ENVIRONMENTAL CHEMISTRY I

3 Credits
Hands-on laboratory training in the application of EPA and state required NPDES Permit Parameters to determine wastewater facility compliance. Includes tests for phosphorus, BOD5, TSS, pH, DO, ammonia as nitrogen, VSS, and fecal coliform. Drinking water testing for fluoride, chlorine residual, hardness and coliform is included. Sampling techniques and preservation methods are reviewed.

PTT 104—PLANT OPERATIONS—SANITARY

3 Credits
Basic principles of aerobic biological treatment processes. Includes activated sludge, trickling filter, lagoons, sludge handling and disinfection. State and federal regulations related to wastewater plants are reviewed.

PTT 105—AIR POLLUTION CONTROL I

3 Credits
Survey of industrial problems, government regulations, inspection, enforcements and air quality criteria. Air pollution sources, effects, history and ambient air quality sampling are studied.

PTT 106—HAZARDOUS MATERIALS MANAGEMENT

3 Credits
The characteristics of hazardous materials are related to the proper management of chemicals in the work place. Topics include hazardous materials and waste regulations, worker training, cleanup procedures, and waste minimization.

PTT 107—APPLIED RESEARCH I

3 Credits
Involves research in an area of interest in water treatment, municipal wastewater, industrial wastewater or other environmental areas. Practical experience at a work site, such as a laboratory, treatment facility, research or training center. Students completing the course earn credits toward the experience requirement for certification.

PTT 108—ENGINEERING PROPERTIES OF EARTH MATERIALS

3 Credits
Introduces the basic principles of geologic structures, soil formation, and hydrology. Studies how geologic conditions affect environmental problems.

PTT 109—WATER SUPPLY

3 Credits
Covers elementary engineering aspects of water supply and distribution and maintenance of collection systems. Studies pumping, storage, metering, maintenance of lift stations and sewer repair.

PTT 202—APPLIED RESEARCH II

3 Credits
Continuation of applied research with students at the work site of an operating facility offering experience with participation in the profession.

PTT 203—ENVIRONMENTAL MICROBIOLOGY

3 Credits
A microbiology course with emphasis on microorganisms specific to water, wastewater and related public health and stream sanitation problems. Microbial growth, nutrition, metabolism and factors affecting growth are covered. Provides laboratory exercises in bacteriological techniques in the analysis of samples for numbers, types and effects of microbes in the degradation and/or rehabilitation of our air, food and water supplies.

PTT 204—BASIC FLUID MECHANICS

3 Credits
Introduces principles of flow measurement, metering in closed conduits, open channels, streams, storm runoff and pump characteristics. Includes basic physics principles related to water hydraulics, and air flow.

PTT 207—WATER TREATMENT

3 Credits
Basic principles and methods of water purification including: coagulation, sedimentation, filtration, treatment chemicals, taste and odor control, bacteriological control, mineral control, design criteria, maintenance and operational programs. Reverse osmosis and electrodialysis are also considered.

PTT 208—PLANT OPERATIONS—INDUSTRIAL

3 Credits
Deals with wastewater treatment processes in various industries, including coagulation, sedimentation, activated sludge, neutralization, equalization, cyanide and chromote removal. Instrumentation, maintenance and troubleshooting are also covered.

PTT 209—PLANT MAINTENANCE

3 Credits
Skill development in reading a maintenance manual, proper maintenance procedure, maintenance records and spare parts inventory. Emphasizes safety in preventive maintenance and scheduling of maintenance activities. Blowers, pumps, motors, collection systems, chemical feeds unit and dewatering systems are considered from a maintenance aspect. Safety is emphasized.

PTT 211—BACKFLOW PREVENTION AND DEVICE TESTING

3 Credits
Principles of backflow prevention programs suitable for both large and small, public and private water companies as well as state and local regulations. Skill development in recognizing cross-connections and applying appropriate devices to prevent backflow. Laboratory testing includes various backflow devices, troubleshooting common problems and providing routine maintenance on these assemblies.

PTT 212—SOLIDS HANDLING AND DISPOSAL

3 Credits
Principles of treatment and disposal of wastewater sludges generated by treatment facility. Types of equipment available and its applicability to different sludges are reviewed. Examines equipment needed for treatment, conditioning, dewatering and disposal. State and federal regulations are reviewed.

PTT 213—AIR POLLUTION CONTROL II

3 Credits
In-depth study of various air quality analysis and modeling techniques.

PTT 214—ENVIRONMENTAL REGULATIONS

3 Credits
Reviews the permitting process and paperwork necessary to meet air, water and land disposal regulations.

PTT 215—WASTE DISPOSAL

3 Credits
Discusses solid and hazardous waste disposal problems. Topics includes landfills, incinerators, composting, recycling, and hazardous waste minimization.

PTT 216—ENVIRONMENTAL CHEMISTRY II

3 Credits
An in-depth look into the analysis of metals and organics. Discussion includes the operation of atomic absorption, gas and liquid chromatography and mass spectrophotometers.

PTT 281-293—SPECIAL TOPICS IN POLLUTION TREATMENT TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

PTT 299—OPERATOR REVIEW

3 Credits
Designed as a review for a state certification examination in municipal or industrial wastewater treatment.

WELDING TECHNOLOGY

The Welding Technology program offers instruction in several types of welding processes: MIG, TIG, pipewelding, oxy-acetylene gas welding and cutting, and shielded metal arc welding. Course work includes interpretation of welding blueprints, electrical fundamentals for welding, metallurgy, and OSHA requirements.

A two-year program, requiring 65 credits, leads to the Associate in Applied Science Degree. Technical Certificates are also available in specialized areas. Programs are offered in Anderson, Evansville, Fort Wayne, Gary, Indianapolis, Kokomo, Lafayette, Madison, Muncie, Richmond, South Bend, Terre Haute, Valparaiso, Sellersburg and Tell City.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Technical Courses (51 Credits)

Prefix	No.	Title	Semester Credits
WLD	101	Gas Welding I	3
IMT	120	Metallurgy Fundamentals	3
WLD	103	Arc Welding I	3
IMT	102	Introduction to Print Reading	3
IMT	121	Industrial Safety	3
WLD	107	Welding Troubleshooting	3
WLD	108	Shielded Metal Arc I	3
WLD	109	Oxy-Acetylene Gas Welding and Cutting	3
WLD	110	Welding Fabrication I	3
WLD	201	Special Welding Processes	3
WLD	202	Arc Welding II	3
WLD	203	Pipe Welding I	3
WLD	204	Pipe Welding II	3
WLD	206	Shielded Metal Arc II	3
WLD	207	Gas Metal Arc (Mig) Welding	3
WLD	208	Gas Tungsten Arc (Tig) Welding	3
WLD	209	Welding Certification	3

General Education Courses (15 Credits)

ENG	101	English Composition	3
ENG	102	English Composition II	3
MAT	101	Algebra I	3
SCI	101	Physical Science	3
SOC	101	Human Relations	3

Regional Electives (3 Credits) 3

Total Credits 66

WELDING TECHNOLOGY COURSE DESCRIPTIONS

WLD 101—GAS WELDING I

3 Credits
Instruction in oxy-acetylene welding, including gas welding techniques, brazing, and flame cutting.

WLD 103—ARC WELDING I

3 Credits
The welding of ferrous metals and alloys using shielded metal arc methods, single and multipass techniques,

and flat and horizontal positions. Emphasis is on safe practices.

WLD 105—WELDING EQUIPMENT AND ELECTRICAL MAINTENANCE

3 Credits
Theory of electricity, its uses and applications in welding, and the troubleshooting and maintenance of electric welding equipment and power sources. The construction and maintenance of oxy-fuel welding and cutting equipment will also be covered.

WLD 107—WELDING TROUBLESHOOTING

3 Credits
Concentrates on the evaluation of weldments, welding procedures and tolerances, and joint design and alignment.

WLD 108—SHIELDED METAL ARC WELDING I

3 Credits
Covers SMAW safety hazards and safety practices, with emphasis on SMAW theory. Includes welding of ferrous metals and alloys in the flat and horizontal welding positions using single and multipass techniques with various electrodes.

WLD 109—OXY-ACETYLENE GAS WELDING AND CUTTING

3 Credits
Basic instruction in oxy-acetylene welding, with emphasis on welding techniques in flat, horizontal, vertical, and overhead positions. Includes brazing and flame cutting with attention to safety hazards and safe practices in oxy-acetylene welding and cutting.

WLD 110—WELDING FABRICATION I

3 Credits
Principles of layout, measurements, and joint designs used in the fabrication of steel and aluminum products. Students will construct individual and/or group projects, focusing on tolerances and fit up of metal products. Emphasis is placed on safety procedures in fabrication.

WLD 111—ARC WELDING I SHOP

3 Credits
Provides experience in welding in flat and horizontal positions on mild steel, using various electrodes.

WLD 112—ARC WELDING III

3 Credits
Introduces welding in vertical up and down positions.

WLD 113—MIG I

3 Credits
Covers various gas metal arc welding (GMAW) processes, including microwire, flux core, innershield and submerged arc, in all welding positions.

WLD 114—INTRODUCTORY WELDING

3 Credits
Designed to provide basic skills and fundamental knowledge in oxyacetylene welding and shielded metal for maintenance welders, auto service and body technicians, and individuals in the mining industry. Industry welding practices and detailed study of techniques used in making all weld positions. Brazing and flame cutting and electrode selection and uses are also covered. Emphasizes safe practices in welding, cutting and shielded metal arc.

WLD 115—SHOP PRACTICE I

1 Credit
Open use of shop to practice various types of welding to improve operator skill.

WLD 116—SHOP PRACTICE II

1 Credit
Continued open use of shop to practice various types of welding to improve operator skill.

WLD 117—SHOP PRACTICE III

1 Credit
Continued open use of shop to practice various types of welding to improve operator skill.

WLD 201—SPECIAL WELDING PROCESSES

3 Credits
Advanced study of welding methods, processes, techniques, machines and equipment.

WLD 202—ARC WELDING II

3 Credits
Extensive welding practice on mild steel using 60 and 70 series electrodes. Practice in producing single and multi-pass welds in vertical and overhead positions. Stressing safety and health of welders will be stressed.

WLD 203—PIPE WELDING I

3 Credits
Techniques of welding pipe in horizontal, flat, vertical up, and overhead positions with shielded metal arc welding (SMAW) process. Includes electrodes, joint design, and fit up.

WLD 204—PIPE WELDING II

3 Credits
Further instruction in welding pipe in horizontal, flat, vertical up, and overhead positions with shielded metal arc welding (SMAW) process. Includes electrodes, joint design, and fit up.

WLD 205—WELDING CODES AND SPECIFICATIONS & ESTIMATING

3 Credits
Reviews types of welding codes, testing operations and procedure specifications; with attention to filler metals, positions, preheat and heat treatment, backing strips, preparations of base metals, cleaning and defects. Includes instruction in specifications and estimations. Student will prepare estimates for jobs based on calculations of time and materials.

WLD 206—SHIELDED METAL ARC WELDING II

3 Credits
Extensive welding practice on mild steel using 60 to 70 series electrodes. Includes practicing producing single and multi-pass welds in vertical and overhead positions. Safety and health of welders will be stressed.

WLD 207—GAS METAL ARC (MIG) WELDING

3 Credits
Considers various gas metal arc welding (GMAW) processes, including microwire, flux-core, innershield, and submerged arc, with emphasis on metal inert gas welding. Techniques of welding in all positions on various thicknesses of metal.

WLD 208—GAS TUNGSTEN ARC (TIG) WELDING

3 Credits
Provides extensive experience in gas tungsten arc welding. Demonstrates welds on various types and thicknesses of metal, using all welding positions.

WLD 209—WELDING CERTIFICATION

3 Credits
Prepares students for certification in shielded arc, TIG, and MIG welding through study of the qualifications, procedures, and equipment standards. Includes a survey of qualifying agencies, associations, and societies.

WLD 210—WELDING FABRICATION II

3 Credits
Advanced study of layouts, measurements, and joint designs used in the fabrication of steel and aluminum products. Students will construct advanced individual and/or group projects using tolerances and fit up of metal products. Emphasis is placed on safety procedures in fabrication.

WLD 281-293—SPECIALS TOPICS IN WELDING TECHNOLOGY

1-5 Credits
A Special Topics Course provides students with the opportunity to experience seminars, workshops, and other instructional activities on topics of interest that reinforce the concepts presented in their program area (Contact Chief Academic Officer for more information).

INSTRUCTIONAL SUPPORT
GENERAL EDUCATION, RELATED EDUCATION AND BASIC SKILLS ADVANCEMENT

GENERAL EDUCATION COURSES

Prefix	No.	Title	Credits
Communications			
ENG	101	English Composition	3
ENG	102	English Composition II	3
ENG	103	Speech	3
ENG	201	Technical Writing	3
Social Sciences			
SOC	101	Human Relations	3
SOC	102	Introduction to Psychology	3
SOC	103	Intercultural Relations	3
SOC	104	Introduction to Sociology	3
SOC	105	Introduction to Political Science	3
SOC	106	Principles of Macroeconomics	3
SOC	107	Principles of Microeconomics	3
Mathematics			
MAT	101	Algebra I	3
MAT	102	Algebra II	3
MAT	103	Geometry/Trigonometry	3
MAT	104	Algebra/Trigonometry I	3
MAT	105	Algebra/Trigonometry II	3
MAT	106	Calculus	3
MAT	107	Math of Finance	3
MAT	108	Statistics	3
MAT	109	Finite Math	3
Humanities			
HUM	101	Survey of Humanities	3
HUM	102	Ethics	3
HUM	103	Art Appreciation	3
HUM	104	Music Appreciation	3
Life and Physical Sciences			
SCI	101	Physical Science	3
SCI	102	Physical Sci Lab	1
SCI	103	Physics I	3
SCI	104	Physics Lab I	1
SCI	105	Physics II	3
SCI	106	Physics Lab II	1
SCI	107	Chemistry	3
SCI	108	Chemistry Lab	1
SCI	109	Biology	3
SCI	110	Biology Lab	1
SCI	111	Microbiology	3
SCI	112	Microbiology Lab	1
SCI	113	Anatomy & Physiology I	3
SCI	114	Anatomy & Physiology Lab I	1
SCI	115	Anatomy & Physiology II	3
SCI	116	Anatomy & Physiology Lab II	1
SCI	203	Advanced Physics	3

GENERAL EDUCATION COURSE DESCRIPTIONS

COMMUNICATIONS

ENG 101—ENGLISH COMPOSITION

3 Credits
Emphasizes competence in organizing and expressing ideas in writing. Instruction focuses upon writing process, structure, patterns, and context.

ENG 102—ENGLISH COMPOSITION II

3 Credits
Builds on the writing skills taught in English 101 and emphasizes on-the-job writing situations. Writing assignments will include memos, letters, resumes, and informal reports.

ENG 103—SPEECH

3 Credits
Fundamentals of speech, includes preparation and extemporaneous presentation of informative, persuasive and demonstrative speeches, also oral reports appropriate for diverse audiences.

ENG 201—TECHNICAL WRITING

3 Credits
Builds on the writing skills taught in English 101. Students will demonstrate their ability to prepare a technical report using standard research techniques and demonstrate both written and oral competencies.

SOCIAL SCIENCES

SOC 101—HUMAN RELATIONS

3 Credits
A study of human motivation and behavior. Students learn about themselves and others in order to function effectively.

SOC 102—INTRODUCTION TO PSYCHOLOGY

3 Credits
Provides a general survey of the field of psychology. Includes study of learning, motivation, perception, psychological disorders, therapy, and research methods.

SOC 103—INTERCULTURAL RELATIONS

3 Credits
Examines the cultural values and ethics of foreign countries in comparison to those of the United States.

SOC 104—INTRODUCTION TO SOCIOLOGY

3 Credits
A survey course designed to introduce the student to the science of human society, including fundamental concepts, descriptions, and analysis of society, culture, the socialization process, social institutions, and social change.

SOC 105—INTRODUCTION TO POLITICAL SCIENCE

3 Credits
An introduction to basic principles, theories and major factors that influence decision-making within the political process. Contemporary issues of national and world politics are studied.

SOC 106—PRINCIPLES OF MACROECONOMICS

3 Credits
Provides an overview of macroeconomic issues: The determination output, employment, unemployment, interest rates, and inflation. Monetary and fiscal policies are discussed, as are public and international economic issues. Introduces basic models of macroeconomics and illustrates principles with the experience of the U.S. and foreign economics.

SOC 107—PRINCIPLES OF MICROECONOMICS

3 Credits
Introduces the nature and method of economics, the price system, and capitalism. In addition, the course covers demand, supply, and elasticity, the costs of production, and how these costs are determined. Under perfect competition, monopoly, monopolistic competition, and oligopoly concludes with an examination of how factors of production are determined under perfect competition and the various forms of monopoly.

MATHEMATICS

MAT 101—ALGEBRA I

3 Credits
Presents an in-depth study of the fundamental concepts and operations of algebra. Introduces algebra through linear equations in one unknown. Includes graphing, powers of ten, scientific notation and the metric system.

MAT 102—ALGEBRA II

3 Credits
Provides further study in algebra with emphasis on systems of equations. Includes fractions and quadratic equations, factoring and logarithms.

MAT 103—GEOMETRY/TRIGONOMETRY

3 Credits
Covers geometric topics including fundamentals of geometry, polygons, solid geometry, properties of circles, constructions, right triangles and trigonometric ratios as they apply to right and oblique triangles.

MAT 104—ALGEBRA/TRIGONOMETRY I

3 Credits
Provides study in algebra including factoring, algebraic fractions, graphing of functions, polar coordinate systems plus right triangle trigonometry.

MAT 105—ALGEBRA/TRIGONOMETRY II

3 Credits
Continuation of Algebra/Trigonometry I with emphasis on oblique triangles, graphs of trigonometric functions, radicals, complex numbers, exponential and logarithmic functions, inequalities, variation and trigonometric identities.

MAT 106—CALCULUS

3 Credits
Presents an overview of analytical geometry and calculus including conic sections, limits, derivatives and integrals.

MAT 107—MATH OF FINANCE

3 Credits
Covers percents, ratios, integers, linear equations, formulas and statistics as applied to business.

MAT 108—STATISTICS

3 Credits
Study of the collection, interpretation and presentation of descriptive and inferential statistics. Includes measures of central tendency, probability, binomial and normal distributions, hypothesis testing of one and two sample populations, confidence intervals, chi-square testing, and correlation.

MAT 109—FINITE MATH

3 Credits
Review of algebraic expressions and equations, inequalities, metrics, linear programming, conversion between number bases, notation, properties and operations of set theory. Introduces logic, Boolean algebra, and probability.

HUMANITIES

HUM 101—SURVEY OF HUMANITIES

3 Credits
Familiarizes students with the interrelated disciplines within the humanities: literature, fine arts, history, music, architecture, and philosophy.

HUM 102—ETHICS

3 Credits
A study of ethical language, methods of justifying ethical decisions and types of ethical value systems, with emphasis on practical applications in terms of personal and social morality.

HUM 103—ART APPRECIATION

3 Credits
A broad survey of the world's art, from prehistoric to contemporary. Emphasis is on an appreciation of art through understanding its purposes and origins.

HUM 104—MUSIC APPRECIATION

3 Credits
A non-technical course designed to familiarize the student with the forms of music. Covers instruments of the orchestra, the style characteristics of major composers, commonly used musical terms and pertinent information about composers, performers, and conductors. Directed listening assignments and readings are required.

LIFE AND PHYSICAL SCIENCES

SCI 101—PHYSICAL SCIENCE

3 Credits
A non-mathematical introduction to physical concepts and theories demonstrating knowledge of current applications and developing trends in the fields of physics, chemistry, earth science and astronomy.

SCI 102—PHYSICAL SCIENCE LAB

1 Credit
Provides for applications in experimentation and analysis in the physical sciences.

SCI 103—PHYSICS I

3 Credits
A practical approach to the basic physics of force, work, rate, momentum, resistance, potential and kinetic energy and power. Applications of these concepts to the four energy systems-mechanical, fluid, electrical and thermal.

SCI 104—PHYSICS LAB I

1 Credit
Provides for applications in experimentation and analysis in Physics 1.

SCI 105—PHYSICS II

3 Credits
A continuation of Physics I presenting the concepts of force transformers, energy converters, transducers, vibrations and waves, radiation, optics and optical systems.

SCI 106—PHYSICS LAB II

1 Credit
Applications in experimentation and analysis for Physics II.

SCI 107—CHEMISTRY

3 Credits
An introductory study of chemical operations. Includes atomic structure, chemical bonding, oxidation-reduction, properties of matter, solutions, chemical equilibrium, acids, bases, salts, PH and concentrations.

SCI 108—CHEMISTRY LAB

1 Credit
Applications in experimentation and analysis for Chemistry.

SCI 109—BIOLOGY

3 Credits
Introduction to basic concepts of life forms, structures of plants and animals, human body systems, genetics/ecology and behavior. Surveys contemporary issues with regard to human interaction with the natural environment.

SCI 110—BIOLOGY LAB

1 Credit
Applications in experimentation and analysis in Biology.

SCI 111—MICROBIOLOGY

3 Credits
Applications of science to the problems of sterilization, growth and conditions of survival of microorganisms, infection, immunity, residence and isolation techniques.

SCI 112—MICROBIOLOGY LAB

1 Credit
Applications in experimentation and analysis for Microbiology.

SCI 113—ANATOMY AND PHYSIOLOGY I

3 Credits
A study of the structures, functions and relationships of the systems of the human body and the physical and chemical factors that influence the systems.

SCI 114—ANATOMY AND PHYSIOLOGY LAB I

1 Credit
Applications in experimentation and analysis in Anatomy and Physiology I.

SCI 115—ANATOMY AND PHYSIOLOGY II

3 Credits
A continuation of the study of the interrelationship of the bodily systems.

SCI 116—ANATOMY AND PHYSIOLOGY LAB II

1 Credit
Provides experience in experimentation and analysis in Anatomy and Physiology II.

SCI 203—ADVANCED PHYSICS

3 Credits
A laboratory-intensive course designed for concepts of force, work, rate, resistance, energy, power, force transformers, energy transformers, momentum, vibration and waves, transducers, time constants, radiation and how those work in different energy systems. Sequel course designed for students of the Tech Prep Program.

RELATED EDUCATION

Related Education courses are not part of the technical education specialty, but relate to and support the specialty. Related Education courses which bear the REL prefix are used *only* in Technical Certificate programs. Descriptions for these courses follow in this section. Other Related Education courses bear the prefix of the programs in which they originate. These course descriptions are located in the program sections. In addition, General Education courses may also be used to fulfill Related Education Requirements.

RELATED EDUCATION COURSES

Prefix	No.	Title	Credits
REL	101	Technical Communications I*	3
REL	102	Technical Communications II*	3
REL	111	Technical Mathematics I*	3
REL	112	Technical Mathematics II*	3
REL	113	Fundamentals of Math*	3
ACC	101	Accounting Principles I	3
ACC	108	Career Essentials of Accounting	3
BUS	101	Introduction to Business	3
BUS	102	Business Law	3
BUS	103	Office Administration	3
BUS	201	Principles of Management	3
BUS	202	Human Resources Management	3
BUS	208	Organizational Behavior	3
CUL	203	Table Service	3
CPT	101	Data Processing Fundamentals	3
CPT	103	Logic and Documentation	3
CPT	202	Data Communications	3
CPT	203	Systems Analysis and Design	3
INF	101	Introduction to Microcomputers	3
INF	206	Integrated Business Software	3
IST	101	Quality Control Concepts and Techniques I	3
IST	102	Techniques of Supervision I	3
IST	104	Techniques of Supervision II	3
IST	203	Reliability Objectives	3
IST	206	Time and Motion Study	3
IST	207	Manufacturing Costs and Value Analysis	3
IST	208	Materials Handling	3
IST	211	Labor Relations	3
IST	212	Manufacturing Organizations I	3
IST	215	Purchasing and Inventory Control	3
MKT	101	Principles of Marketing	3
MKT	102	Principles of Selling	3
MKT	202	Logistics/Purchasing Control	3
SEC	110	Keyboarding Skill Development	1
AMT	101	Manufacturing Processes	3
AMT	102	Introduction to Robotics	3
AST	104	Start and Charge Systems	3
AST	201	Heating and A/C Principles	3
DCT	103	CAD Fundamentals	3
DPT	201	Diesel Overhaul I	3
DPT	202	Diesel Fuel Systems II	3
DPT	205	Diesel Overhaul II	3
DPT	206	Diesel Engine Tune Up	3
ELT	100	Circuits I	4
ELT	103	Digital Principles	3

*For Technical Certificates Only

Prefix	No.	Title	Credits
ELT	104	Computer Fundamentals for Technology	3
ELT	105	Solid State I	3
ELT	113	Basic Electricity	3
IMT	102	Introduction to Print Reading	3
IMT	103	Motors and Motor Control	3
IMT	104	Fluid Power Basics	3
IMT	120	Metallurgy Fundamentals	3
IMT	121	Industrial Safety	3
IMT	202	Electrical Circuits	3
MTT	101	Machine Fundamentals I	3
MTT	108	Precision Measurement	3
MTT	204	CNC Programming I	3
WLD	114	Introductory Welding	3
HST	106	Physiology of Aging	3
HST	108	Psychology of Aging	3
HST	115	Applied Behavioral Psychology	3
MEA	101	Medical Terminology	3
MEA	102	First Aid and CPR	3
MEA	103	Medical Law and Ethics	3
MEA	113	Pharmacology	3
ART	204	Art History Survey I	3
ART	208	Art History Survey II	3

RELATED EDUCATION COURSE DESCRIPTIONS (FOR TECHNICAL CERTIFICATES)

REL 101—TECHNICAL COMMUNICATIONS I (Only for TC students)

3 Credits
A review of the basic written and spoken English required for a variety of technical fields.

REL 102—TECHNICAL COMMUNICATIONS II (Only for TC students)

3 Credits
A continued study of the basic written and spoken English required for a variety of technical fields.

REL 111—TECHNICAL MATHEMATICS I (Only for TC students)

3 Credits
Reviews basic mathematics for various technical fields with emphasis on measurement, ratio, proportion, percentage, formula evaluation, and problem solving applications.

REL 112—TECHNICAL MATHEMATICS II (Only for TC students)

3 Credits
Continued application of mathematical principles and processes to technical fields. Introduces basic geometry with emphasis on equations, squares, square roots and problem solving.

REL 113—FUNDAMENTALS OF MATH (Only for TC students)

3 Credits
Introduces algebra, scientific notation, linear equations, graphing, metric system, measurement of plane and solid figures.

BASIC SKILLS ADVANCEMENT COURSE DESCRIPTIONS

BSA 001—ENGLISH AS A SECOND LANGUAGE I

3 Credits
Focuses on the development of English skills and technical vocabulary relevant to the student's chosen field of study. Designed for students whose first language is not English.

BSA 002—ENGLISH AS A SECOND LANGUAGE II

3 Credits
Builds on English skills gained in BSA 001 and further develops English skills and technical vocabulary relevant to the student's chosen field of study. Also designed for students whose first language is not English.

BSA 007—SPELLING

1 Credit
Develops spelling skills by thorough practice in spelling with attention to rules and exceptions.

BSA 024—INTRODUCTION TO ENGLISH I

3 Credits
Introduces basic writing skills with emphasis on sentence structure and basic grammar. Paragraph structure is introduced.

BSA 025—INTRODUCTION TO ENGLISH II

3 Credits
Furthers skills gained in BSA 024 with emphasis on paragraph structure and essay writing.

BSA 028—VOCABULARY BUILDING

2 Credits
Concentrates on developing general English vocabulary, as well as vocabulary of a chosen technology. Dictionary skills and context skills are included.

BSA 031—READING I

3 Credits
Emphasizes comprehension, vocabulary, and word attack skills beginning at a basic level.

BSA 032—READING II

3 Credits
Advances skills acquired in BSA 031—comprehension, vocabulary, and word attack and further prepares students for program-level courses.

BSA 041—MATHEMATICS I

1 Credit
Develops the basic computational skills of whole numbers and fractions.

BSA 042—MATHEMATICS II

1 Credit
Reviews basic computational skills of fractions and develops computation skills in decimals.

BSA 043—MATHEMATICS III

1 Credit
Reviews basic computational skills in percents, ratio and proportion and measurement.

BSA 045—MATHEMATICS

3 Credits
Reviews instruction in basic computational skills and their applications.

BSA 051—INTRODUCTION TO COLLEGE ALGEBRA

3 Credits
Concentrates on basic algebra skills in preparation for college algebra.

BSA 052—INTRODUCTION TO COLLEGE TRIGONOMETRY

3 Credits
Develops basic trigonometry skills to prepare the student for further study in trigonometry.

BSA 053—INTRODUCTION TO COLLEGE GEOMETRY

3 Credits
Develops basic geometry skills to prepare the student for further study in geometry.

BSA 060—INTRODUCTION TO PHYSICS

2 Credits
Provides basic instruction for physical concepts and technical vocabulary.

BSA 061—INTRODUCTION TO CHEMISTRY

2 Credits
Introduces basic principles of chemistry and technical vocabulary.

BSA 062—INTRODUCTION TO MICROBIOLOGY

2 Credits
Develops a basic understanding of microbiology concepts and technical vocabulary.

BSA 063—INTRODUCTION TO ANATOMY/ PHYSIOLOGY

2 Credits
Studies the basics of the human body as an integrated unit.

BSA 070—COLLEGE STUDY PRINCIPLES

3 Credits
Orients and motivates students for success in college. Develops the skills of textbook-reading, note-taking, and test-taking.

BSA 071—CRITICAL THINKING

3 Credits
Develops critical thinking and problem-solving skills through the recognition of patterns, cause-and-effect relationships, and consideration of alternatives and priorities.

BSA 073—INTRODUCTION TO KEYBOARDING

1 Credit
Deals with basic keyboarding skills applicable to a typewriter or computer.

BSA 074—INTRODUCTION TO COMPUTER LITERACY

1 Credit
Introduces basic computer literacy skills development.

BSA 090—GED PREP I

2 Credits
Presents in-depth preparation for the mathematics and science sections of the GED test.

BSA 091—GED PREP II

2 Credits
Offers in-depth preparation for the social studies, reading, and writing sections of the GED test.

BSA 095—PRINCIPLES OF GED

3 Credits
Reviews all subject areas on the GED test. Includes mathematics, science, social studies, reading, and writing sections.

ACCREDITATIONS AND MEMBERSHIPS

Indiana Vocational Technical College is accredited by the North Central Association of Colleges and Schools and the Indiana Commission on Vocational Technical Education. Other accrediting agencies and affiliates are listed below by region. The College is a member of the American Association of Collegiate Registrars and Admissions Officers, the American Association of Community and Junior Colleges, the Association of Community College Trustees, and the National Association of College and University Business Officers.

Region	Agency	Program Area
1	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	Northwest Indiana Chef's Association	Culinary Arts Technology
	The American Culinary Federation Inc.	Culinary Arts Technology
	U.S. Department of Labor	Culinary Arts Technology
	The American Medical Association Committee on Allied Health Education and Accreditation	
	Joint Review Committee on Respiratory Therapy Education	Respiratory Therapy Technology
	Association of Surgical Technologists	Surgical Technology
	American Association of Medical Assistants	Medical Assistant
	Indiana State Board of Nursing	Practical Nursing
	Indiana State Board of Health	Nurse Aide
2	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant

Region	Agency	Program Area
2	National Accrediting Agency for Clinical Laboratory Sciences	Medical Laboratory Technician
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide Food Handler
	Indiana State Board of Nursing	Practical Nursing Associate in Science in Nursing
	Dietary Managers Association	Dietary Manager
	National League of Nursing	Associate in Science in Nursing
	Indiana Emergency Medical Service Commission	Emergency Medical Technician Ambulance/Advance
3	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant
	Joint Review Committee for Respiratory Therapy Education	Respiratory Therapy Technology
	Indiana State Board of Nursing	Practical Nursing
	Indiana State Board of Health	Nurse Aide Director of Activities/ Extended Care Social Services/Long Term Care
	Dietary Managers Association	Dietary Manager
4	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All

Region	Agency	Program Area
4	National League of Nursing	Associate in Science in Nursing (Completion Option)
	Indiana State Board of Nursing	Associate in Science in Nursing Practical Nursing
	Indiana State Board of Health	Qualified Medication Aide Nurse Aide
	Dietary Managers Association	Dietary Manager
	The American Medical Association Committee on Allied Health Education and Accreditation	
	National Accrediting Agency for Clinical Laboratory Sciences	Medical Laboratory Technician
	American Association of Medical Assistants	Medical Assistant
	Association of Surgical Technologists	Surgical Technology
	Joint Review Committee on Respiratory Therapy	Respiratory Therapy Technology
	American Dental Association	Dental Assistant
	National Institute for Automotive Service Excellence	Automotive Service Technology
5	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant
	Indiana State Board of Health	Qualified Medication Aide
6	North Central Association of Colleges and Schools	All

Region	Agency	Program Area
6	Indiana Commission on Vocational and Technical Education	All
	Indiana Emergency Medical Service Commission	Emergency Medical Technician Ambulance/Advance
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant
	Council for Standards and Human Services	Mental Health Rehabilitation Technology
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide
7	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	The American Medical Association Committee on Allied Health Education and Accreditation	
	National Accrediting Agency for Clinical Laboratory Sciences	Medical Laboratory Technician
	American Association of Medical Assistants	Medical Assistant
	Joint Review Committee on Education in Radiologic Technology	Radiologic Technology
	Indiana State Board of Health	Nurse Aide Social Services/Long Term Care Director of Activities/ Extended Care Qualified Medication Aide
	Indiana Emergency Medical Service Commission	Emergency Medical Technician Ambulance-Advance
	Indiana State Board of Nursing	Practical Nursing

Region	Agency	Program Area
8	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant
	Association of Surgical Technologists, Inc.	Surgical Technology
	American Society of Radiologic Technologists	Radiologic Technology
	Joint Review Committee on Respiratory Therapy Education	Respiratory Therapy Technology
	Indiana State Board of Nursing	Practical Nursing
	National League of Nursing	Practical Nursing
	American Institute for Design and Drafting	Industrial Drafting Technology and Architectural Drafting Technology
	Indiana State Board of Health	Qualified Medication Aide Nurse Aide Social Service/Long Term Care
	American Culinary Federation Inc.	Culinary Arts Technology
	Chef de Cuisine Association of Indiana, Inc.	Culinary Arts Technology
9	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	Indiana State Board of Nursing	Practical Nursing, Associate in Science in Nursing
	National League of Nursing	Associate in Science in Nursing (Completion Option)

Region	Agency	Program Area
9	Indiana State Board of Health	Nurse Aide
	Dietary Managers Association	Dietary Manager
	Educational Institute of National Restaurant Association	Sanitation Certificate
	Indiana Emergency Medical Service Commission	Emergency Medical Technician Ambulance/Advance
10	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	Indiana State Board of Nursing	Practical Nursing
	Indiana State Board of Health	Qualified Medication Aide
11	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	Indiana State Board of Health	Nurse Aide
	Indiana State Board of Nursing	Practical Nursing
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant
	Indiana Emergency Medical Service Commission	Emergency Medical Technician Ambulance-Advance
12	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	The American Medical Association Committee on Allied Health Education and Accreditation	

Region	Agency	Program Area
12	American Association of Medical Assistants	Medical Assistant
	Association of Surgical Technologists	Surgical Technology
	Indiana State Board of Nursing	Practical Nursing Associate in Science in Nursing
13	North Central Association of Colleges and Schools	All
	Indiana Commission on Vocational and Technical Education	All
	Indiana State Board of Nursing	Practical Nursing
	Indiana State Board of Health	Qualified Medication Aide Nurse Aide
	Indiana Emergency Medical Service Commission	Emergency Medical Technician Ambulance/Advance
	National Institute for Automotive Service Excellence	Automotive Service Technology
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants	Medical Assistant

Ivy Tech Foundation
Ensuring the Margin of Difference

The Ivy Tech Foundation exists to meet the unmet needs of Indiana Vocational Technical College.

The Foundation receives tax-deductible gifts from corporations, foundations, organizations and individuals. These gifts are applied immediately to urgent needs in each of the College's instructional centers which together make up the campus of Indiana Vocational Technical College. Additional classrooms, state-of-the-art instructional equipment, student financial assistance and faculty enrichment are just a few of the special needs which the Foundation is able to fund each year through contributions by concerned companies and individuals.

Result: the Foundation builds upon the established base of state funding and provides what our students and faculty know as the "margin of difference"—that edge of excellence which employers demand and Ivy Tech does provide for each student.

Index

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IVYTECH

Indiana's Technical College